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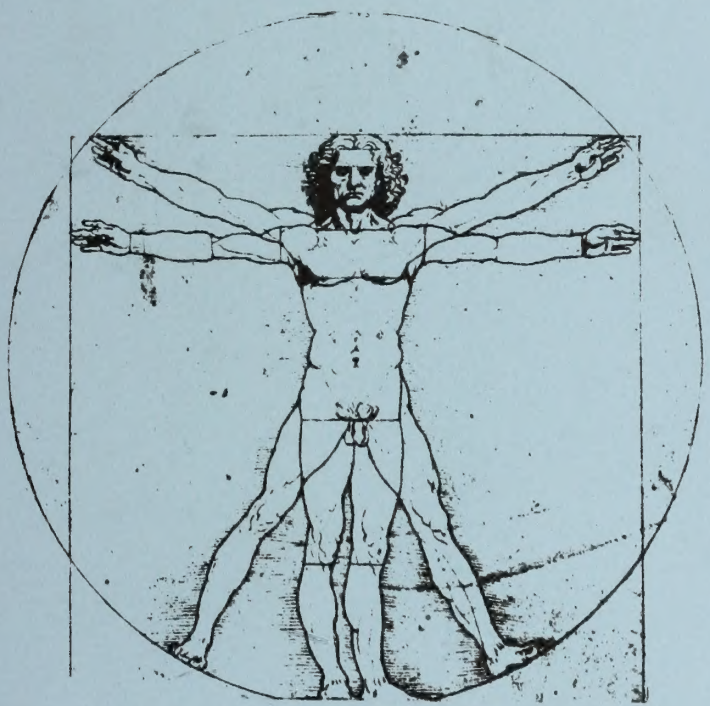
1979
Vol.2

MONTANA AIR POLLUTION STUDY

Meteorological Summary — Appendix
July, 1979



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MONTANA AIR POLLUTION STUDY
Meteorological Study - First Year

Authors

James W. Gelhaus, Air Pollution Meteorologist
Air Quality Bureau
Montana Department of Health and Environmental Sciences
Project Officer, Meteorology and Modeling Studies

William Campbell, Independent Meteorologist
Field Meteorologist for Kalispell/Columbia Falls Area Meteorology Studies for MAPS

Steven Harner, Independent Meteorologist
Field Meteorologist for Anaconda/Butte Area Meteorology Studies for MAPS

Michael Machler, Independent Meteorologist
Field Meteorologist for Missoula Area Meteorology Studies for MAPS

Aaron L. Zimmerman, Certified Consulting Meteorologist
Field Meteorologist in charge of Field Operations of Meteorology Studies for MAPS

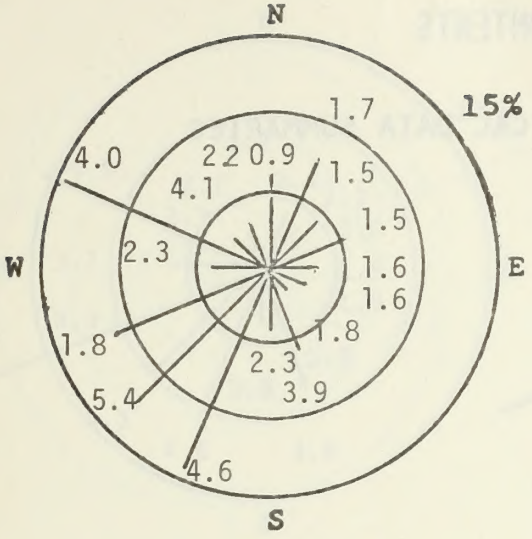
Michael D. Roach, Chief
Air Quality Bureau
Montana Department of Health and Environmental Sciences
Project Manager of MAPS

PREFACE

This document is one of a series of technical reports presenting results from the Montana Air Pollution Study (MAPS), a special air monitoring and health effects project of the Air Quality Bureau of the Montana Department of Health and Environmental Sciences. The MAPS program was funded by the 1977 Montana Legislature with $1.07 million for the 1977-79 biennium in order to develop an improved understanding of the effects of air pollution on health in Montana.

The various activities undertaken as part of the MAPS effort have been grouped into five major categories for purposes of project management: Health Effects, Air Quality, Meteorology/Modeling, Emission Inventory, and Statistics and Data Systems. Each of these technical areas is presenting results in one or more technical reports prepared by the personnel directly involved in the study efforts. In addition, an overall technical summary report and a less technical report to the public will be prepared.

This specific report, in the Meteorology/Modeling area, presents results of the first year of the surface and upper air meteorological monitoring. The study was designed and coordinated by James Gelhaus, Air Pollution Meteorologist of the Air Quality Bureau. Individual sections of the report were written by field or office meteorologists and edited by Mr. Gelhaus.



January 1978
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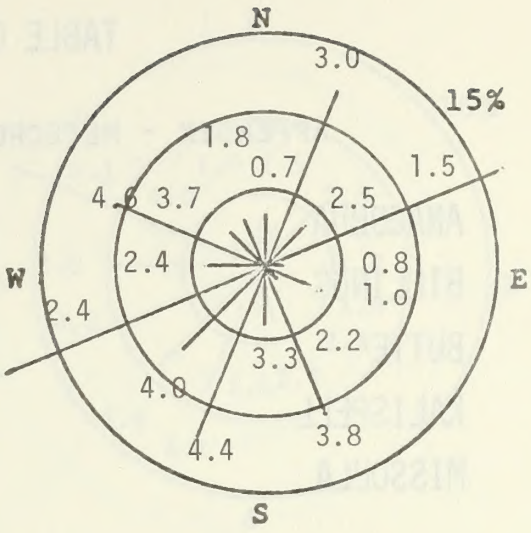
Total Hours 675



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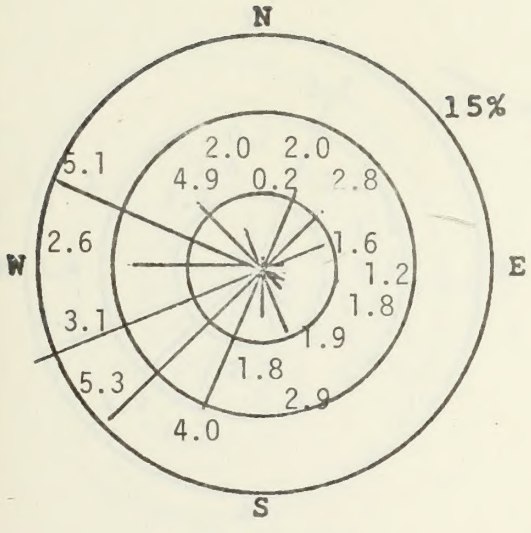
MONTHLY WIND ROSES
Highway Junction Site
Anaconda, MT



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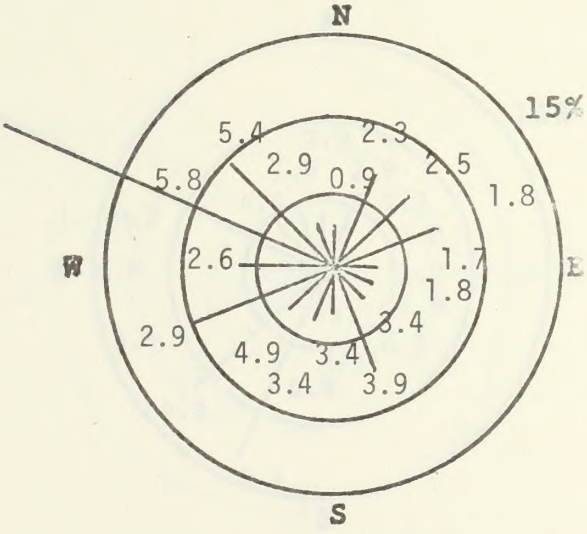

April 1978
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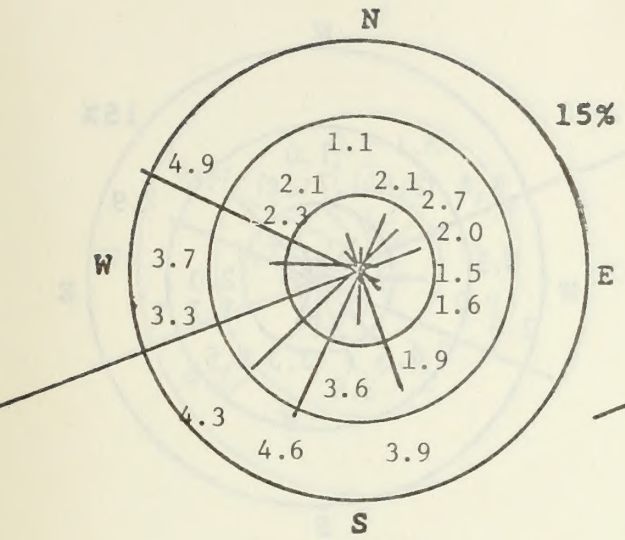
ANACONDA
BILLINGS
BUTTE
KALISPELL
MISSOULA



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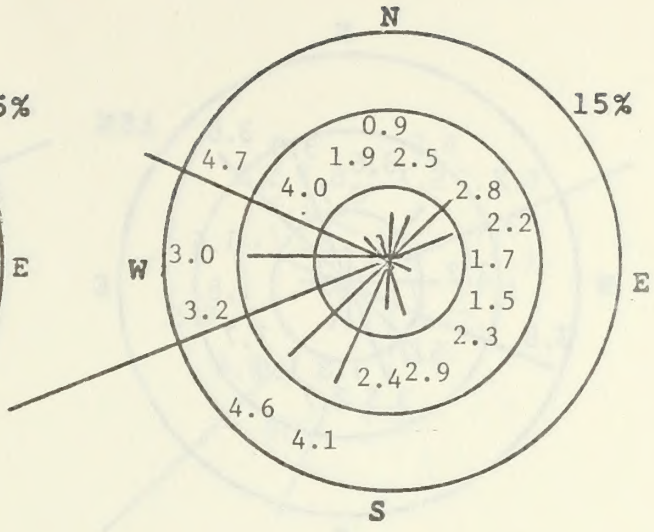

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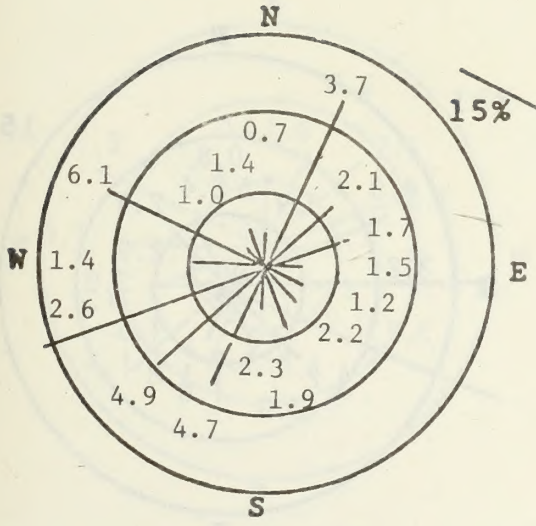
Monthly Wind Roses
Highway Junction Site
Anaconda, Montana



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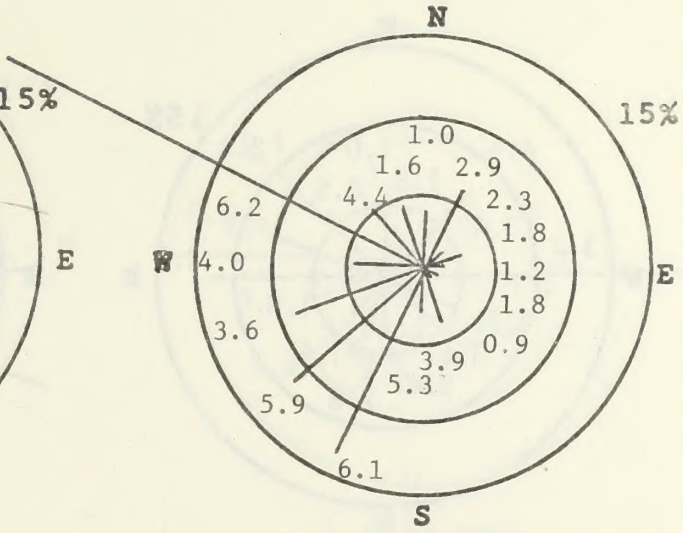

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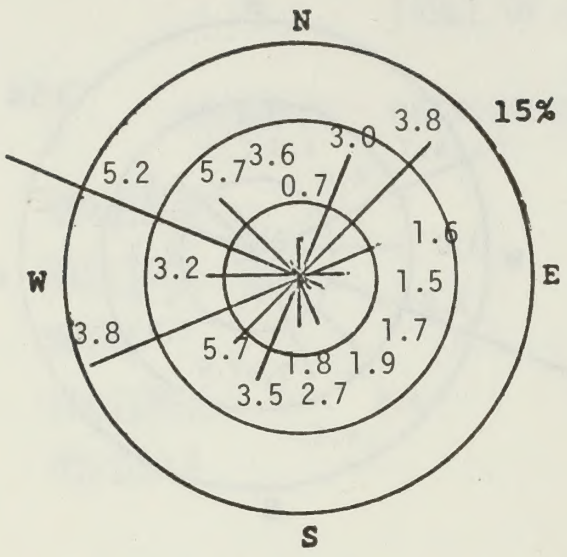

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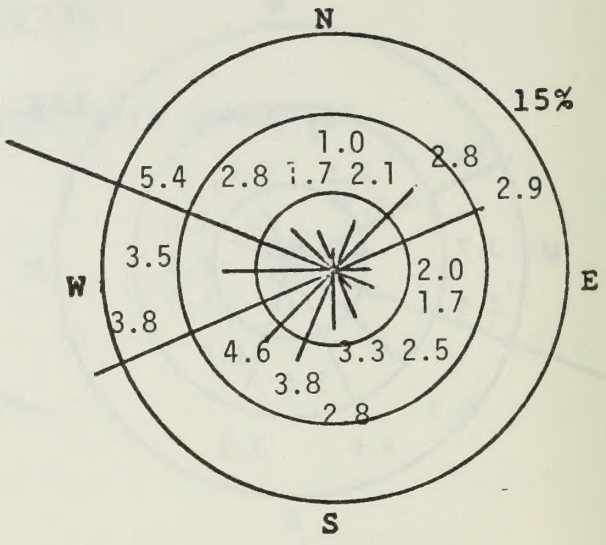

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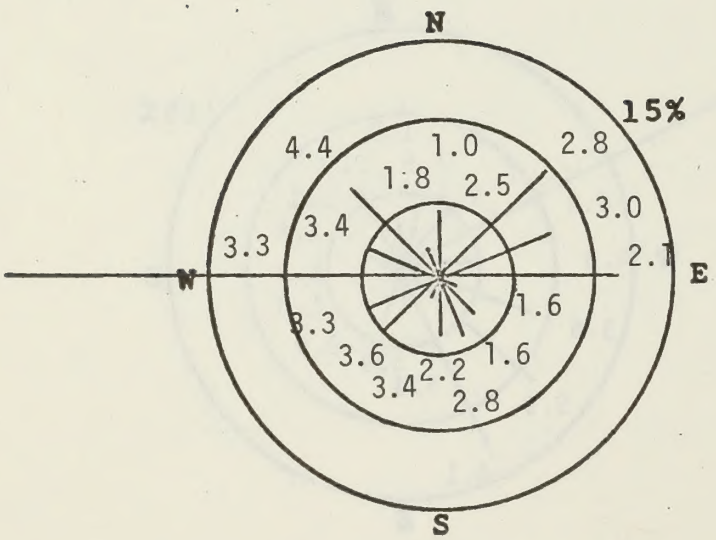
MONTHLY WIND ROSES
Highway Juntion Site
Anaconda, MT



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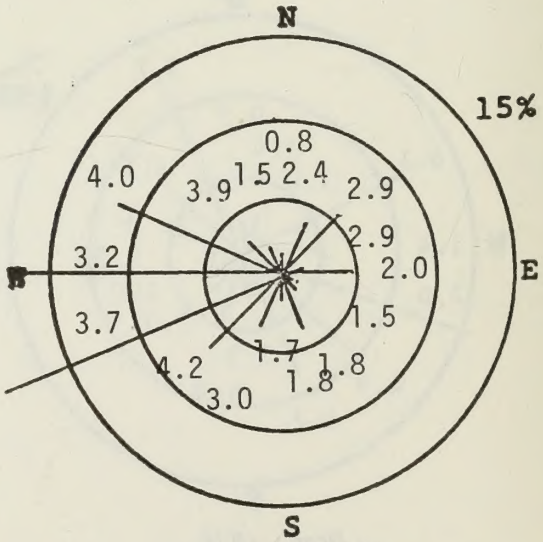

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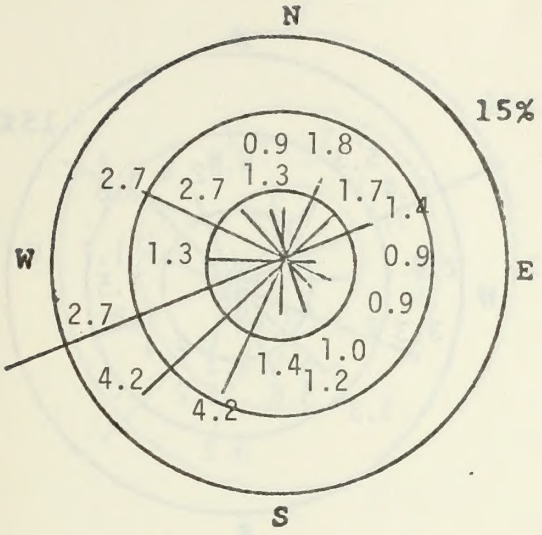

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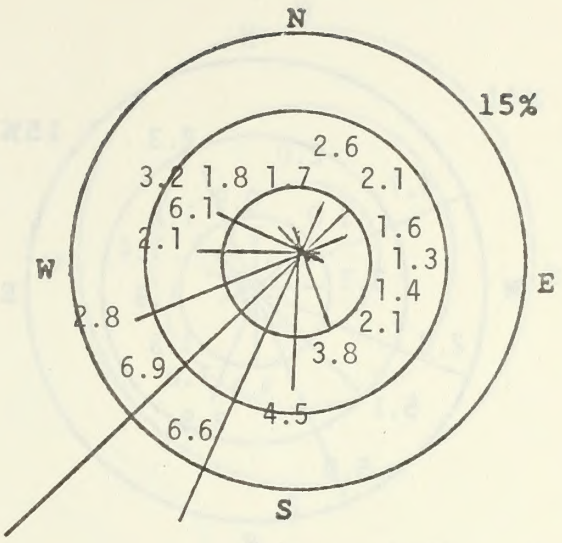

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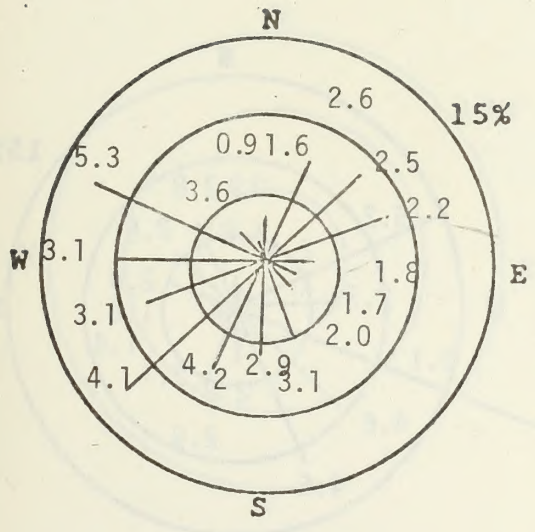
MONTHLY WIND ROSES
Highway Junction Site
Anaconda, MT



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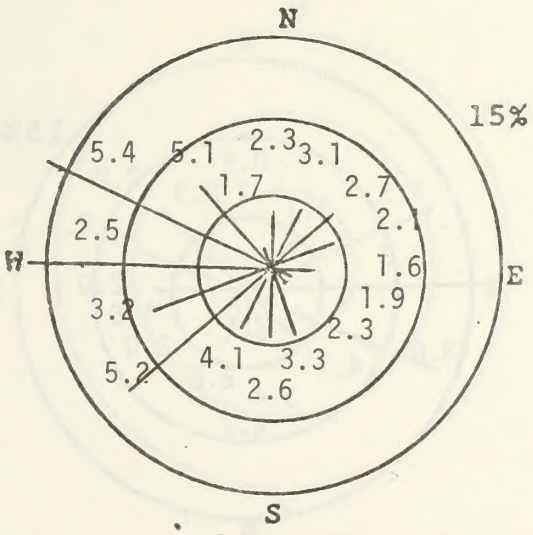

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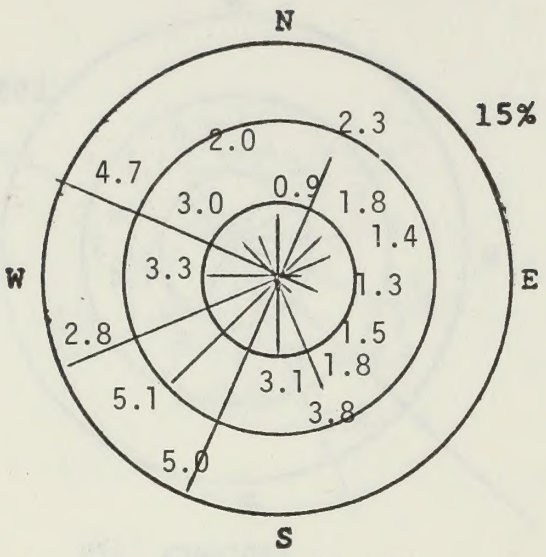

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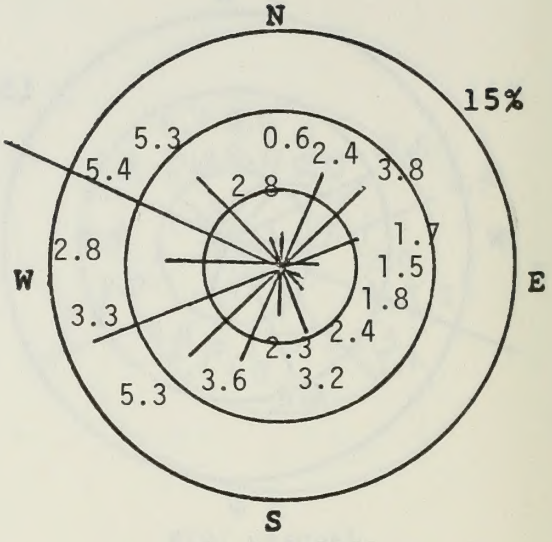

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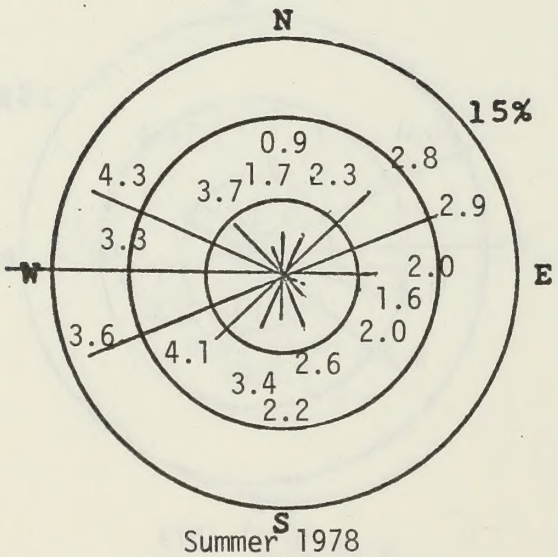
SEASONAL WIND ROSES
Highway Junction Site
Anaconda, MT



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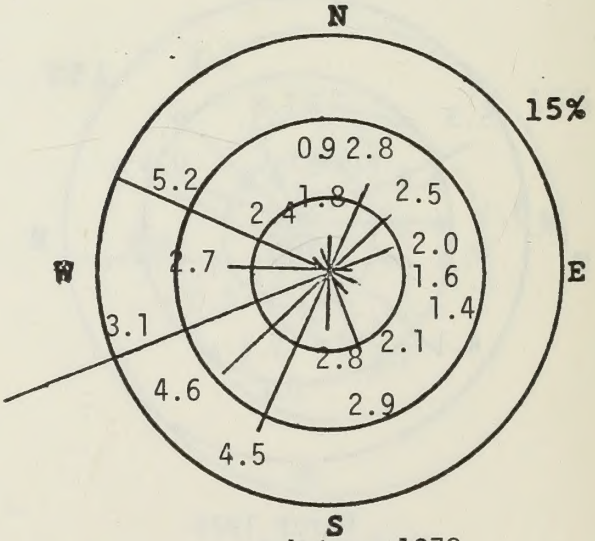
Total Hours 2104



Autumn 1978
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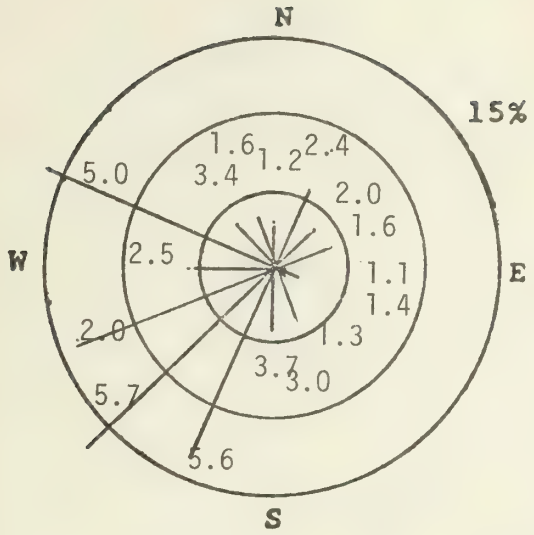

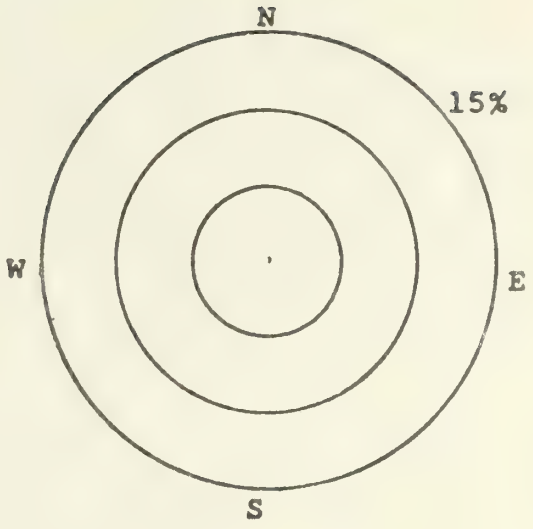

Winter 1978-79
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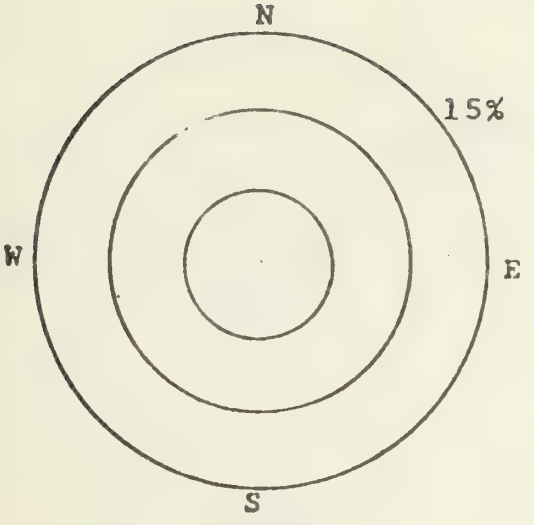
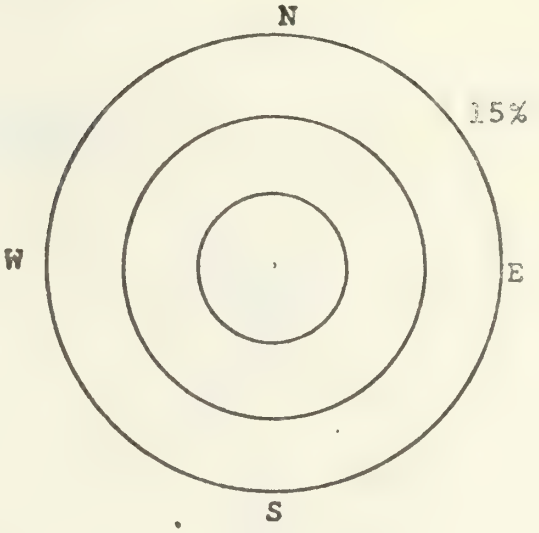
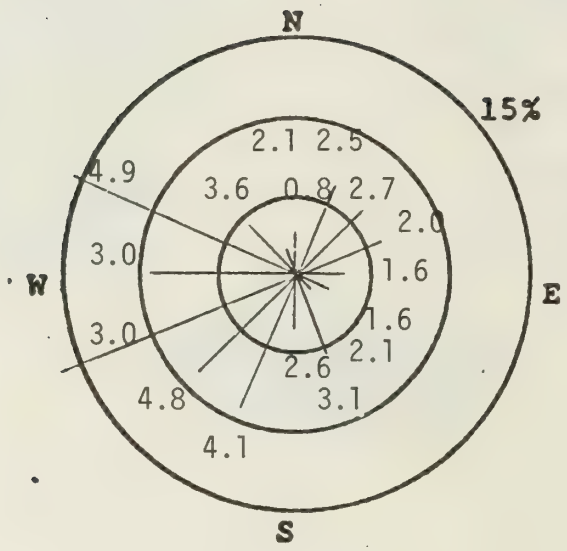
Total Hours 1836

SEASONAL WIND ROSES
Highway Junction
Anaconda, MT

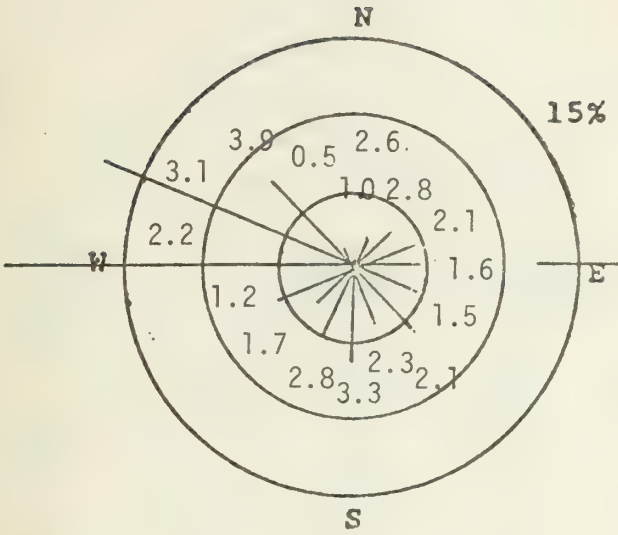






Calm 0.1%
Total Hours 8113

ANNUAL WIND ROSE
Highway Junction Site
Anaconda, MT



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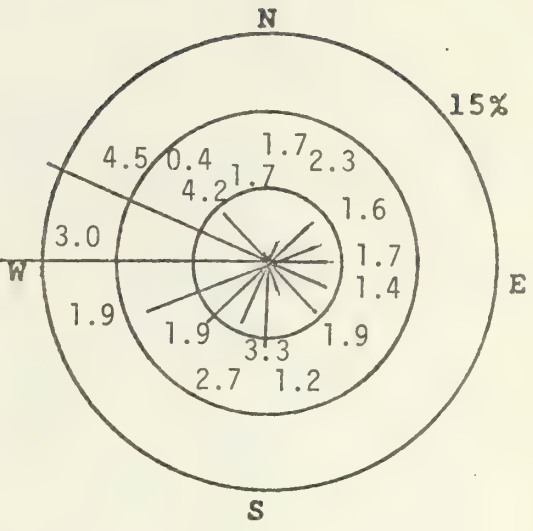

March 1978
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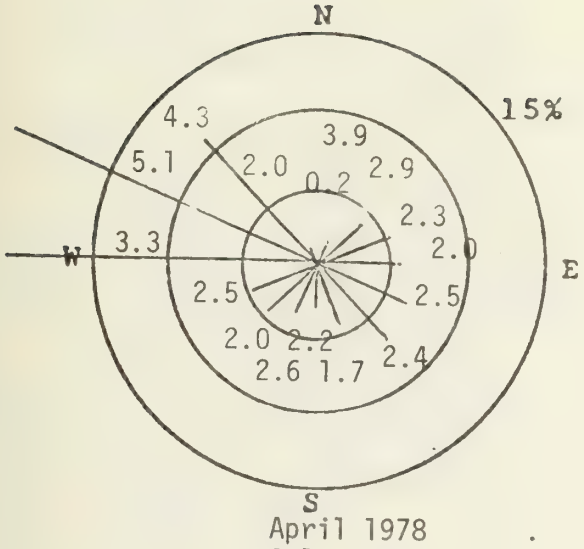
Total Hours 695

MONTHLY WIND ROSES
Water Office Site
Anaconda, MT



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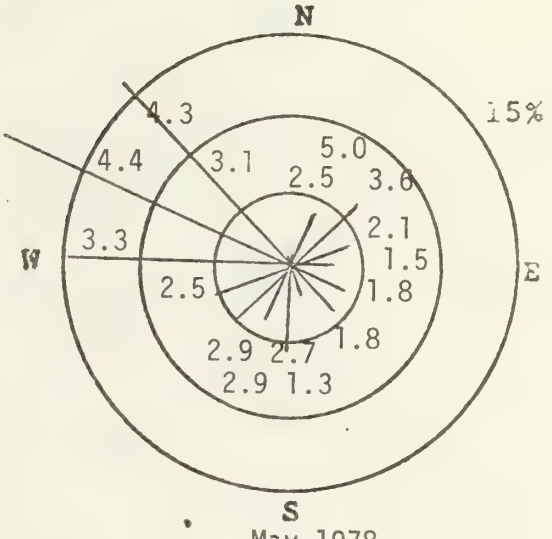

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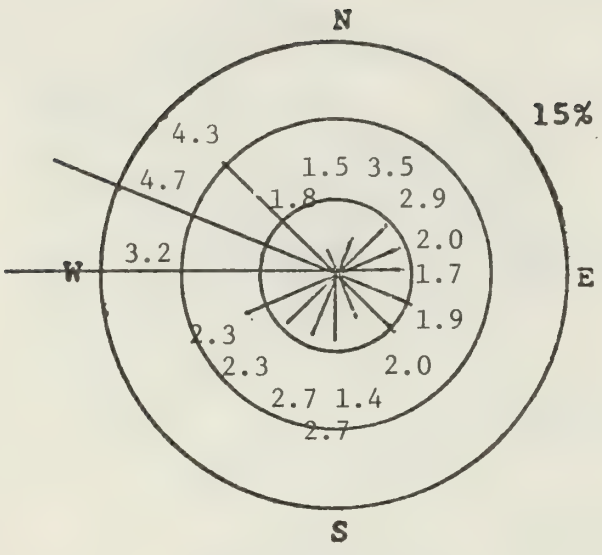

Spring 1978
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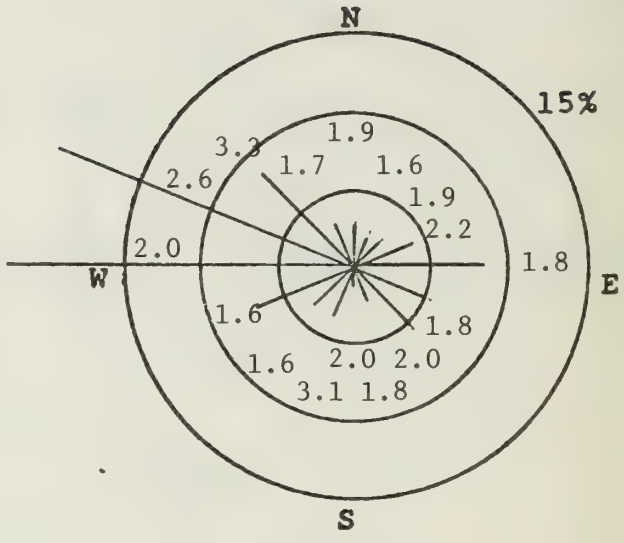
Total Hours. 2054



Summer 1978
Lincoln School Site
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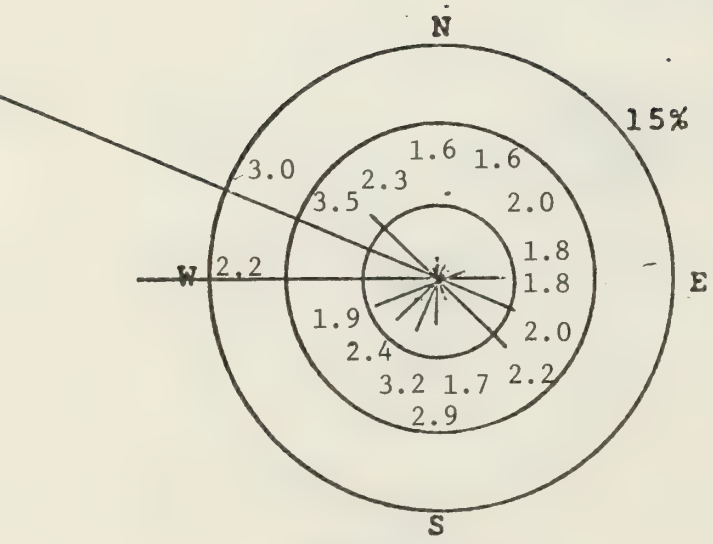
Total Hours 1127

Seasonal Wind Roses
Anaconda, Montana



Autumn 1978
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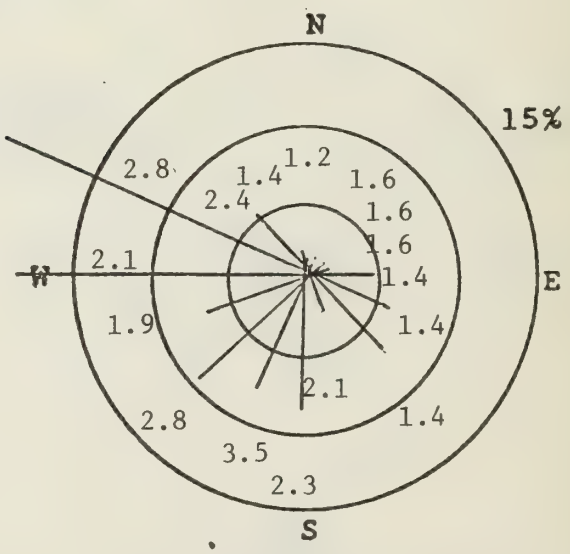
Total Hours 1233



Winter 1978-1979
Lincoln School Site
Calm 0.0%
Total Hours 1351

INVERSION STUDY - FREQUENCY OF OCCURRENCE HOLZWORTH CLASSIFICATION

SITE HIGHWAY JUNCTION

DATE/TIME Autumn 1978 a.m.

INVERSION BASE HEIGHT (m)

HOLZ. INV. TYPE	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	>2000	TOTAL
1	1.5	1.5	1.5	4.4	5.9	3.7	8.8	10.3	0.7	38.3
2	5.1		4.4	5.9	2.2	2.2	6.6	5.1		31.5
3	12.5	0.7	2.2	4.4	1.5		0.7	0.7		22.7
4	5.8				0.7					6.5
5	0.7									0.7
TOTAL	25.6	2.2	8.1	14.7	10.3	5.9	16.1	16.1	0.7	99.7

DATE/TIME Autumn 1978 p.m.

1			3.4	10.3	13.8	5.2	13.8	8.6	1.7	56.8
2		1.7	1.7	5.2		1.7	13.8	8.6		32.7
3	1.7		3.4	1.7	3.4					10.2
4										
5										
TOTAL	1.7	1.7	8.5	17.2	17.2	6.9	27.6	17.2	1.7	99.7

SITE - ANACONDA - HIGHWAY JUNCTION

AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - MORNING

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
		2.1	1.3	2.4	1.5	1.5	1.7	2.1	1.4	1.5			1.7	1.8		

AVERAGE LAPSE RATE BELOW FIRST INVERSION (C)-MORNING

		-0.6	-0.5	-1.0	-2.7	-0.8	-2.0	-1.6	-0.7	-0.7			-1.4	-1.5		

PERCENT FREQUENCY OF SURFACE BASED FIRST INVERSIONS - MORNING

		88.0	81.8	94.4	69.2	72.2	62.5	75.0	69.0	66.6			60.0	52.2		

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL

AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - AFTERNOON

		0.5	0.5	0.5	1.2	0.9	1.3	0.4	1.1	0.5			0.7	0.9		

AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - AFTERNOON

		-1.2	-1.2	-1.7	-3.1	-1.2	-1.7	-1.0	-1.2	-1.0			-2.0	-1.3		

PERCENT FREQUENCY OF SURFACE BASED FIRST INVERSIONS - AFTERNOON

		0.0	0.0	0.0	16.7	27.3	11.1	20.0	30.0	0.0			3.8	17.6		

INVERSION STUDY - FREQUENCY OF OCCURRENCE HOLZWORTH CLASSIFICATION

SITE HIGHWAY JUNCTION

DATE/TIME Winter 1978-79 a.m.

INVERSION BASE HEIGHT (m)

HOLZ. INV. TYPE	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	>2000	TOTAL
1	1.4	2.8	2.1	6.2	4.8	2.8	12.4	4.8		37.3
2	4.8	0.7	2.8	9.0	2.8	5.5	3.4	3.4	0.7	33.1
3	11.0	1.4	2.1	2.8	3.4	1.4	0.7	1.4		24.2
4	4.1			0.7						4.8
5	0.7									
TOTAL	22.0	4.9	7.0	18.7	11.0	9.7	16.5	9.6	0.7	100.1

DATE/TIME Winter 1978-79 p.m.

1	1.0		6.0	9.0	7.0	3.0	5.0	6.0	1.0	38.0
2	4.0	1.0	3.0	9.0	4.0	4.0	8.0	8.0	1.0	42.0
3	1.0	1.0	7.0	5.0	2.0	1.0	3.0			20.0
4										
5										
TOTAL	6.0	2.0	16.0	23.0	13.0	8.0	16.0	14.0	2.0	100.0

ANACONDA - HIGHWAY JUNCTION

MIXING HEIGHTS - NUMBER OF OCCURRENCES
Morning 1978-79

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100			6	4	12	4	4	8	4	5	3			20	16		
101-250			1	1	3	4	5	5	4	4	4			8	14		
251-500			1	3	1		4	3	4	1				4	11		
501-750			2	3	1	1	1		1	1	5			5	2		
751-1000						1	2			2				1	2		
1001-1500			1	1		4	2			2				5	2		
>1500					1					1				1			
Total			11	12	18	14	18	16	13	16	12			44	47		

MIXING HEIGHTS - PERCENT OCCURRENCE
MORNING

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100			54.5	33.3	66.7	28.6	22.2	50.0	30.8	31.3	25.0			45.5	34.0		
101-250			9.1	8.3	16.7	28.6	27.8	31.3	30.8	25.0	33.3			18.2	29.8		
251-500			9.1	25.0	5.6		22.2	18.8	30.8	6.3				9.1	23.4		
501-750			18.2	25.0	5.6	7.1	5.6		7.7	6.3	41.2			11.4	4.3		
751-1000						7.1	11.1			12.5				2.3	4.3		
1001-1500			9.1	8.3		28.6	11.1			12.5				11.4	4.3		
>1500					5.6					6.3				2.3			
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)																	
			4.3	4.7	6.6	5.0	7.7	2.5	4.3	4.7	4.9			5.4	4.8		

INVERSION STUDY - % FREQUENCY OF OCCURRENCE
SITE _ ANACONDA - HIGHWAY JUNCTION

DATE/TIME Autumn 1978
a.m.

INVERSION BASE HEIGHT (m)

THICKNESS (m)	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2000	Total
1-100	8.0	1.4	5.8	3.6	5.8	2.9	8.0	8.0	0.7	44.2
101-250	14.5		1.4	7.2	2.2	2.2	6.5	5.8		39.8
251-500	2.2		0.7	4.3	1.4	0.7	1.4	2.2		12.9
501-750		0.7			0.7					1.4
>750	0.7									0.7
TOTAL	25.4	2.1	7.9	15.1	10.1	5.8	15.9	16.0	0.7	99.0
NO INVERSIONS										1.4

DATE/TIME Autumn 1978
p.m.

1-100	1.6		3.1	9.4	11.1	1.6	18.8	4.7	1.6	51.9
101-250		1.6	3.1	4.7	4.7	3.1	4.7	11.1		33.0
251-500			1.6	1.6		1.6	1.6			6.4
501-750										
>750										
TOTAL	1.6	1.6	7.8	15.7	15.8	6.3	25.1	15.8	1.6	91.3
NO INVERSIONS										9.4

MIXING HEIGHTS - NUMBER OF OCCURRENCES
AFTERNOONS

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100						1	1	1		1					2		
101-250								3	2	1					5		
251-500			3	1	1	3	7	10	1	3				5	18		
501-750			2	3	1	1		3	3	2	5			5	6		
751-1000			1	2	1			1			2			4	1		
1001-1500				1	7	1	1			2	1			9	1		
>1500			4	4	4	1	3		2	6	6			9	5		
Total			10	11	14	7	12	18	8	15	14			32	38		

MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100						14.3	8.3	5.6		6.7					5.3		
101-250								16.7	25.0	6.7					13.2		
251-500			30.0	9.1	7.1	42.9	58.3	55.6	12.5	20.0				15.6	4.7		
501-750			20.0	27.3	7.1	14.3		16.7	37.5	13.3	35.7			15.6	15.8		
751-1000			10.0	18.2	7.1			5.6			14.3			12.5	2.6		
1001-1500				9.1	50.0	14.3	8.3			13.3	7.1			28.1	2.6		
>1500			40.0	36.4	28.6	14.3	25.0		25.0	40.0	42.9			28.1	13.2		
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)																	
			6.7	7.9	7.2	4.2	7.3	3.5	6.4	6.9	7.9			6.4	5.7		

INVERSION STUDY - % FREQUENCY OF OCCURRENCE
SITE _ Anaconda - Highway Junction

DATE/TIME Winter 1978 a.m.

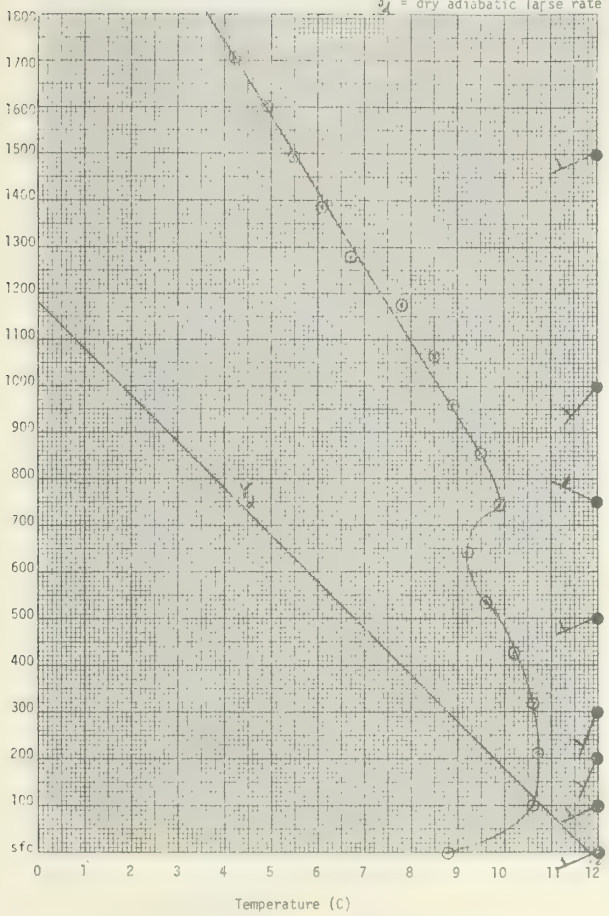
INVERSION BASE HEIGHT (m)

THICKNESS (m)	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2000	Total
1-100	8.9	2.7	2.7	7.5	7.5	6.2	6.2	4.8		46.5
101-250	9.6	0.7	2.7	7.5	2.1	2.7	7.5	3.4	0.7	36.9
251-500	3.4	0.7	1.4	3.4	1.4	0.7	2.7	1.4		15.1
501-750		0.7								0.7
750										
TOTAL	21.9	4.8	6.8	18.4	11.0	9.6	16.4	9.6	0.7	99.2
NO INVERSIONS										0.7

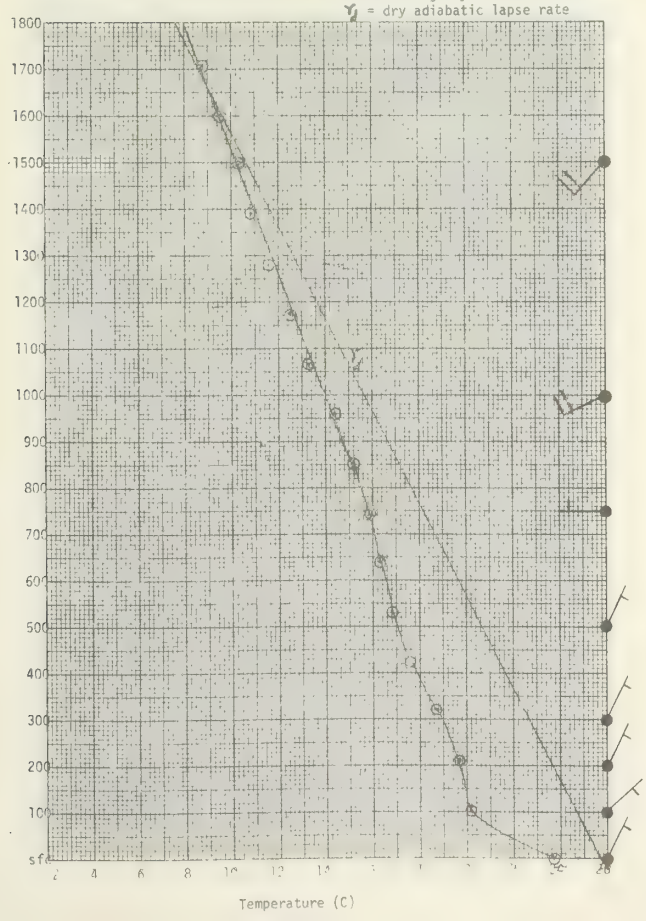
DATE/TIME Winter 1978-79
p.m.

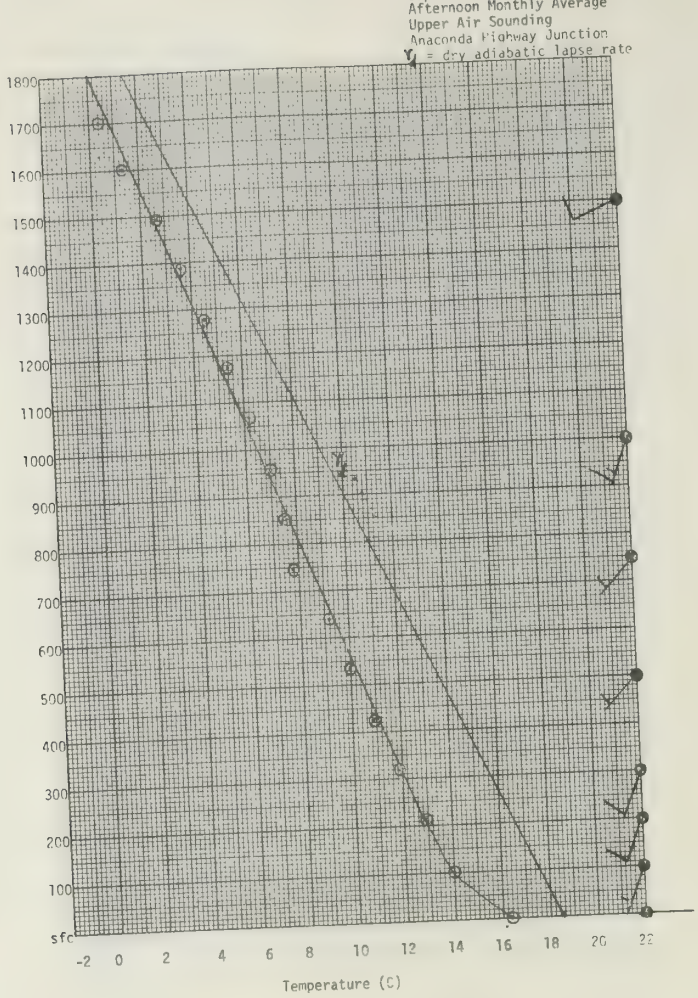
1-100	4.8		5.8	8.7	4.8	4.8	5.8	6.7	1.0	42.4
101-250	1.0	3.8	7.7	13.5	7.7	1.0	4.8	5.8		45.3
251-500			1.9			1.9	2.9	1.0	1.0	8.7
501-750										
750										
TOTAL	5.8	3.8	15.4	22.2	12.5	7.7	13.5	13.5	2.0	96.4
NO INVERSIONS										3.8

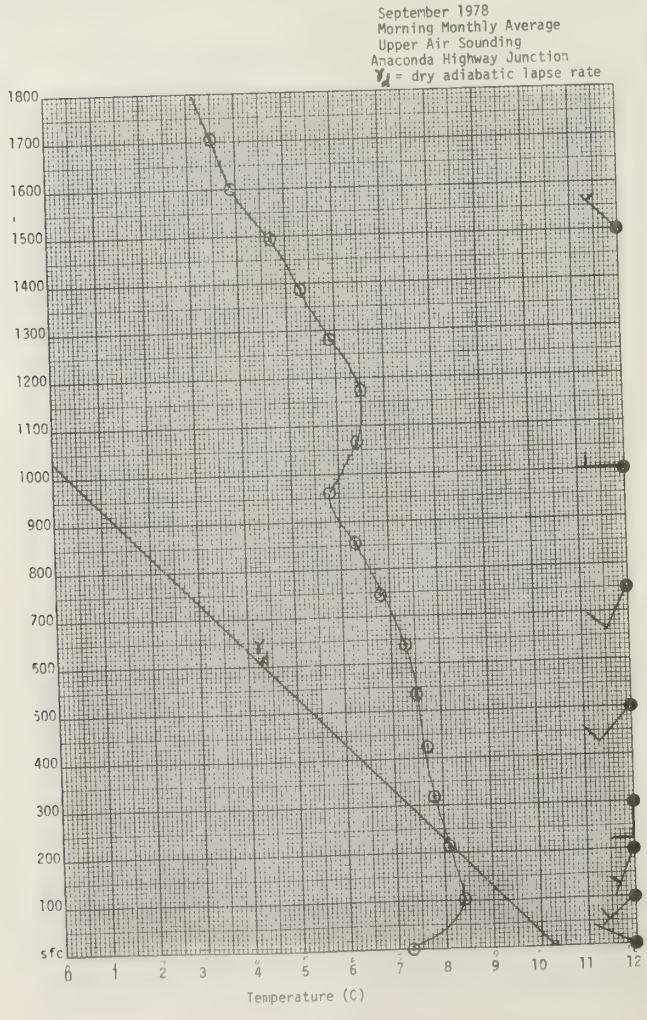
August 1978
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate



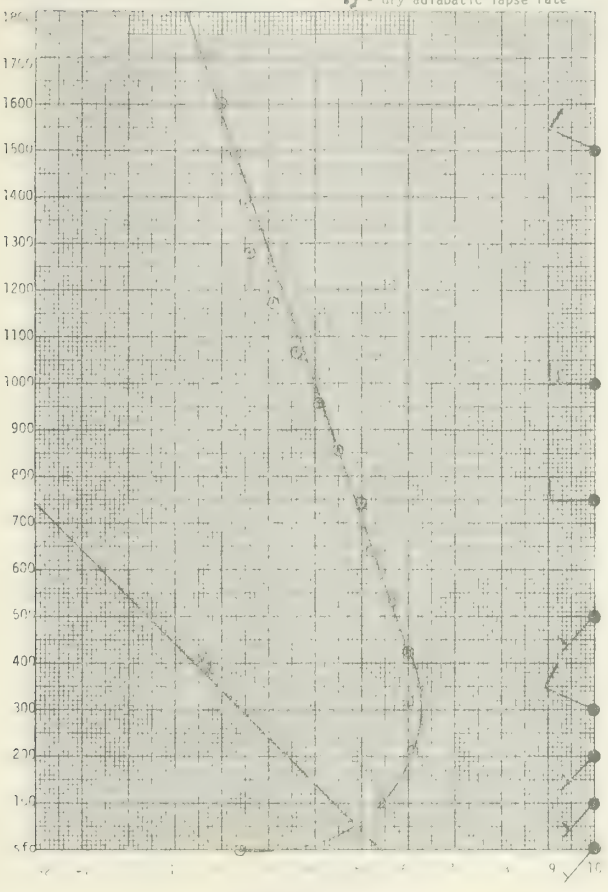
August 1978
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate




Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-2 0 2 4 6 8 10 12 14 16 18 20 22
Temperature (C)

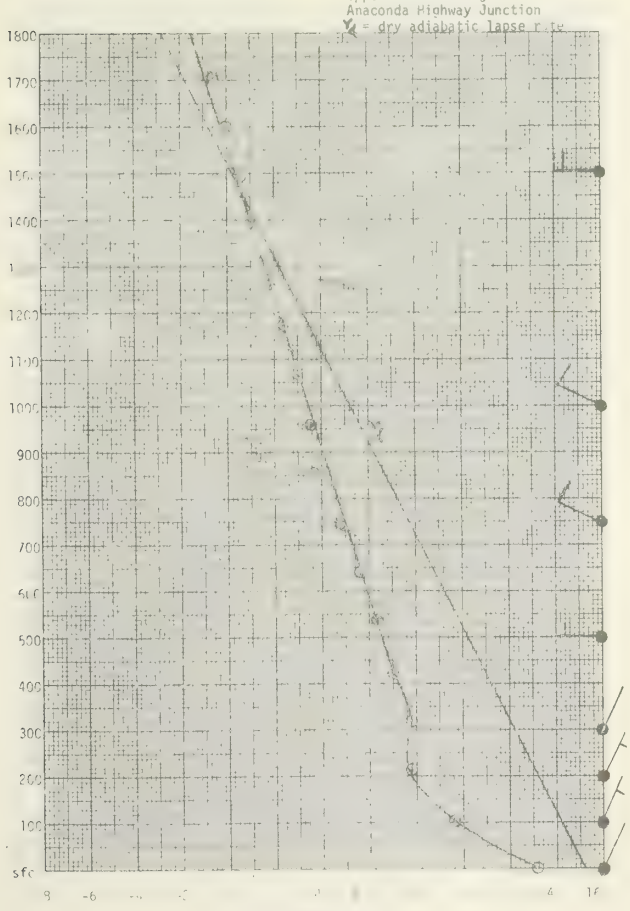

September 1978
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
0 1 2 3 4 5 6 7 8 9 10 11 12
Temperature (C)

October 1978
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
= dry adiabatic lapse rate



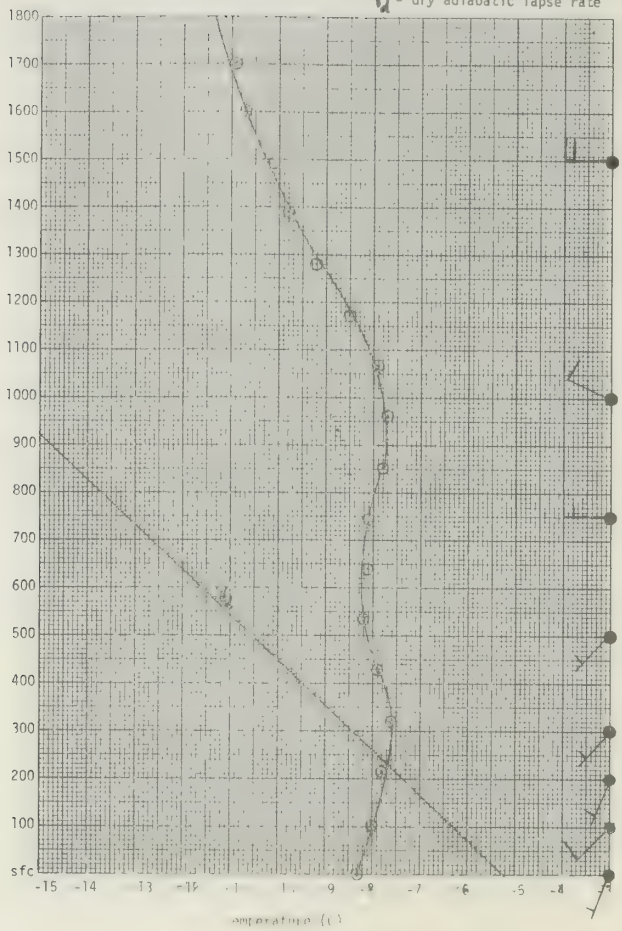
Temperature (C)

October 1978
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
= dry adiabatic lapse rate

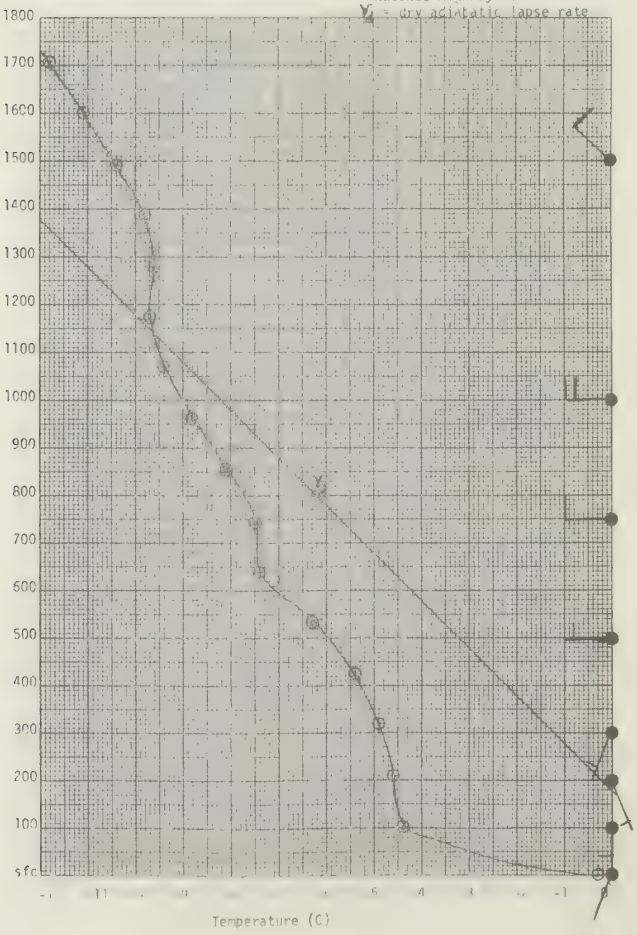


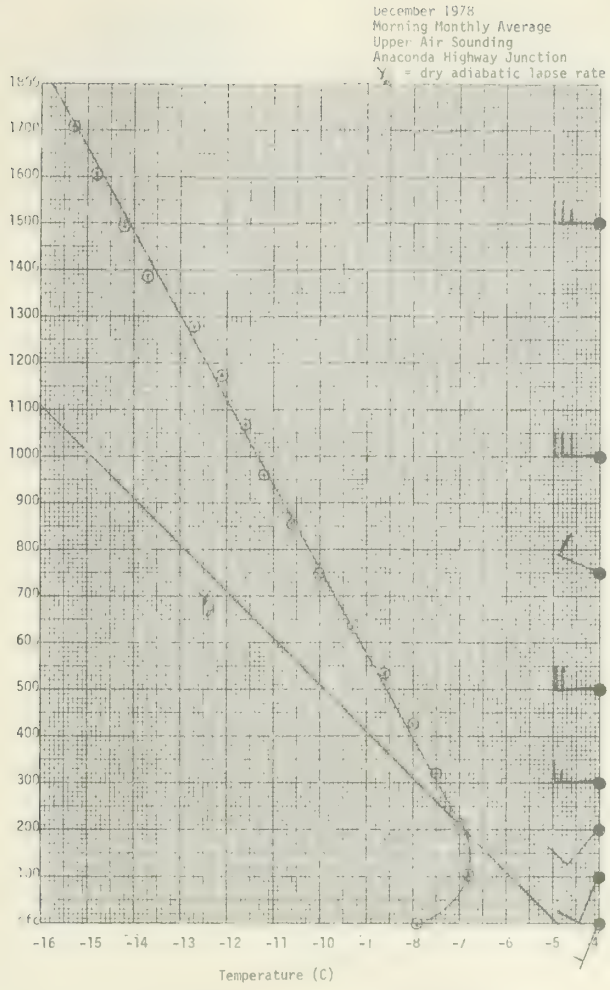
Temperature (C)

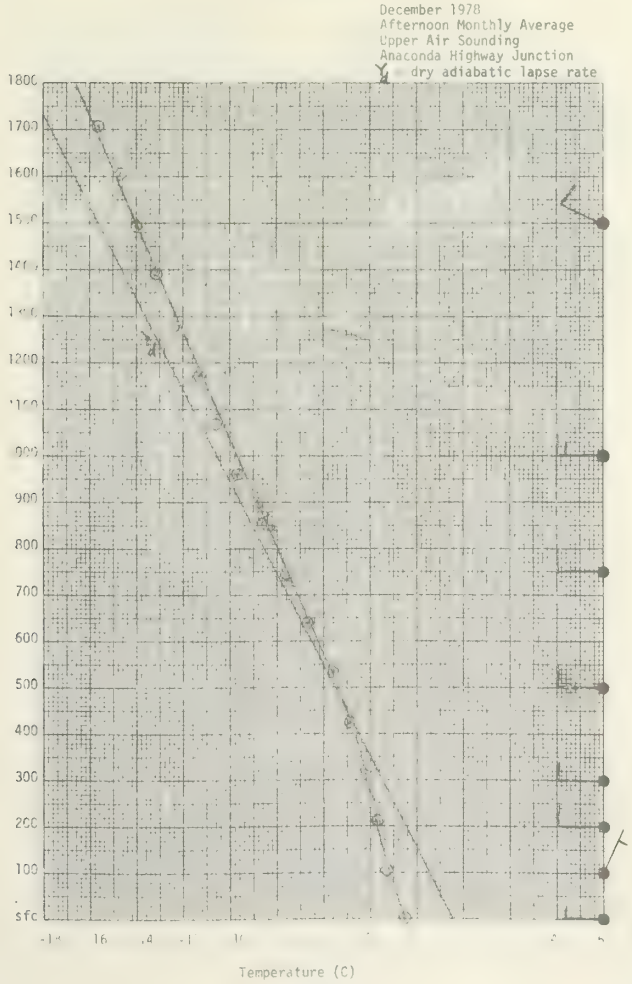
November 1978
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate

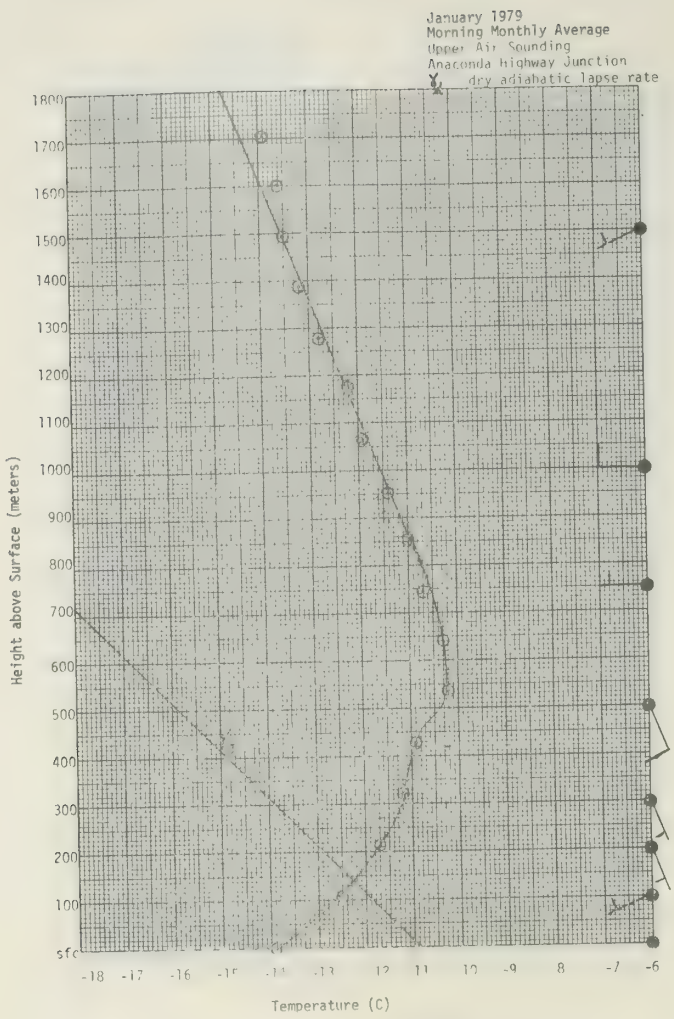


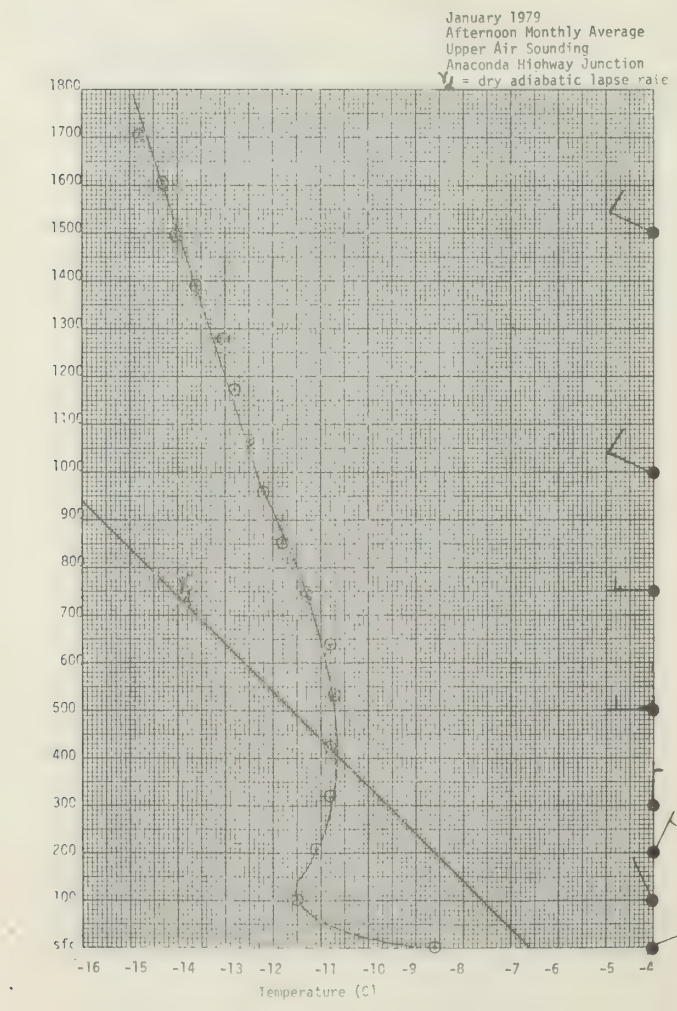
November 1978
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate



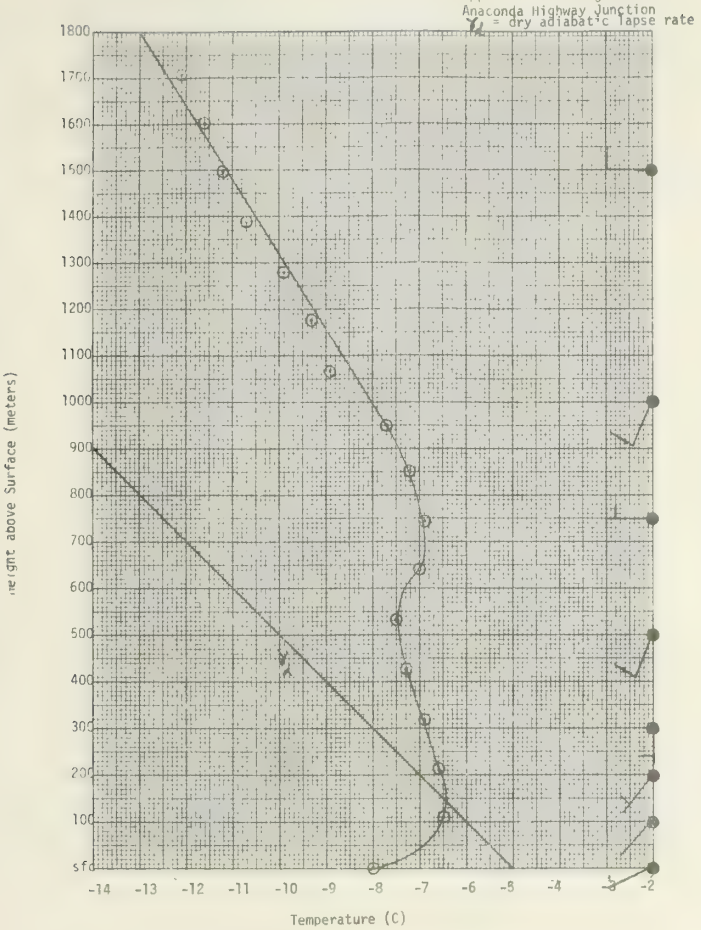

December 1978
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
= dry adiabatic lapse rate
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4
Temperature (C)


December 1978
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
dry adiabatic lapse rate
1800
1700
1600
1200
900
800
700
600
500
400
300
200
100
sfc
Temperature (C)

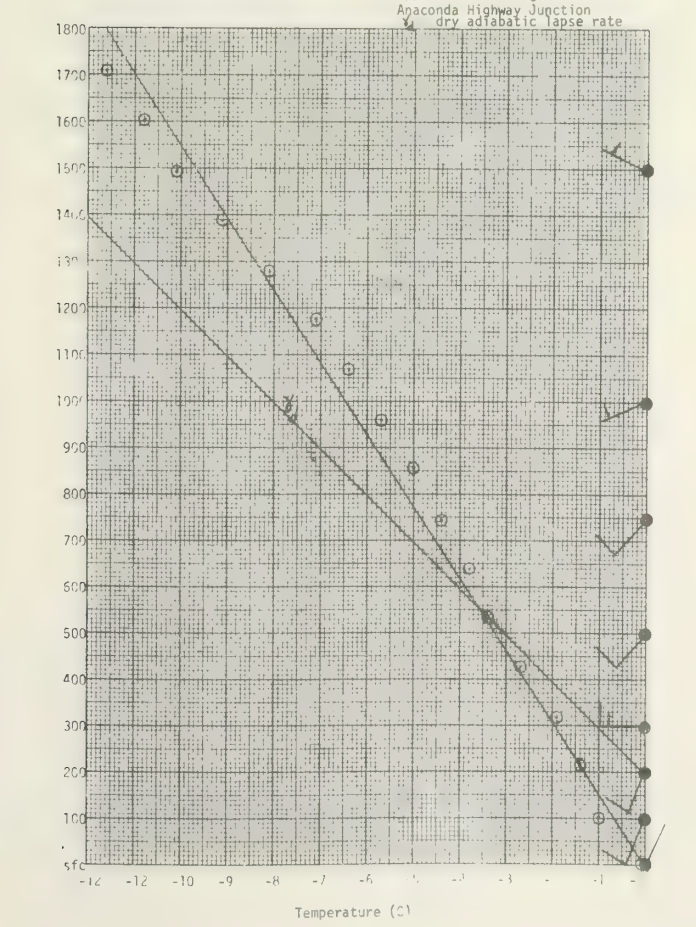

January 1979
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
dry adiabatic lapse rate
Height above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-18 -17 -16 -15 -14 -13 12 11 10 -9 8 -7 -6
Temperature (C)


January 1979
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
= dry adiabatic lapse rate
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4
Temperature (C)

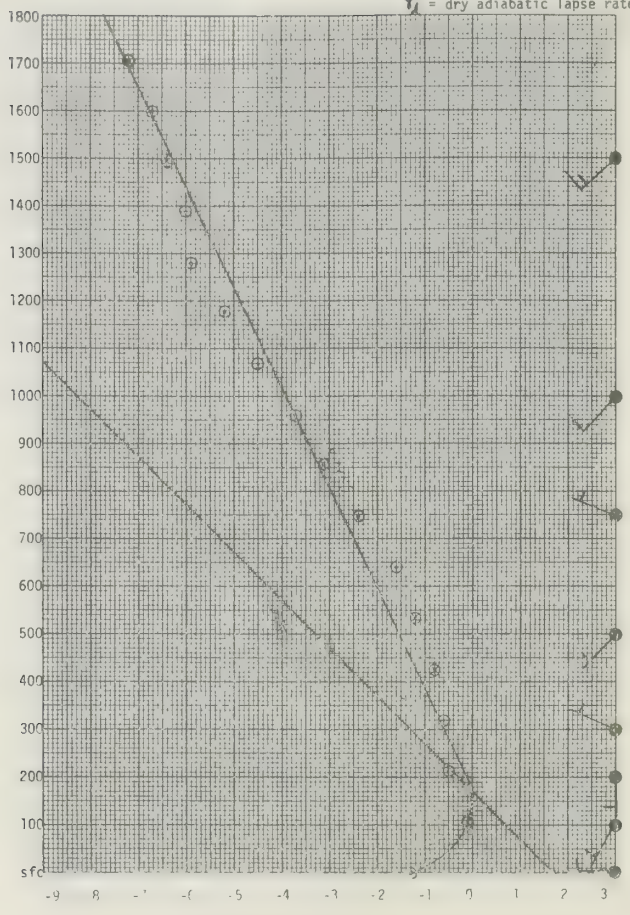
February 1979
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
= dry adiabatic lapse rate



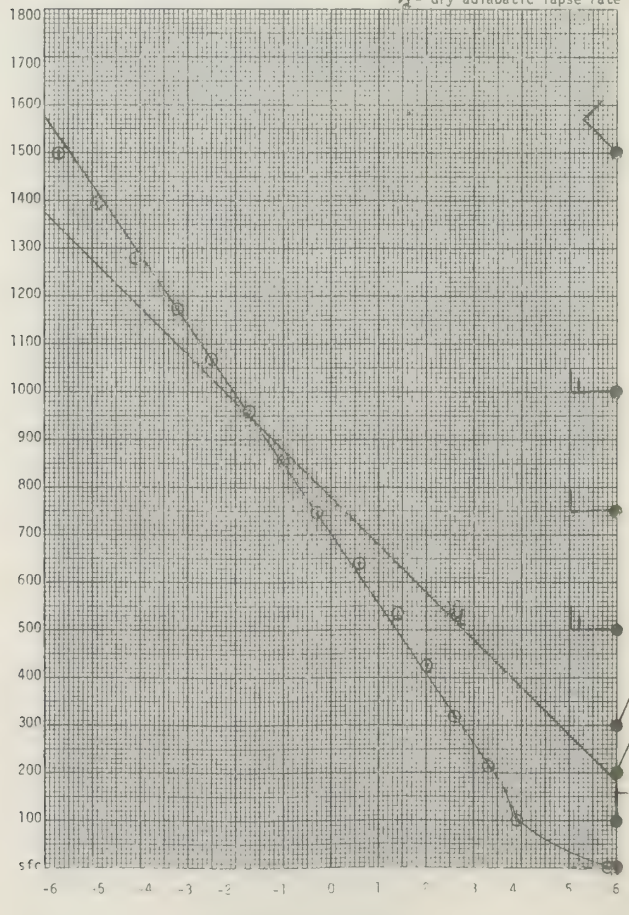
February 1979
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
dry adiabatic lapse rate



March 1979
Morning Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate



March 1979
Afternoon Monthly Average
Upper Air Sounding
Anaconda Highway Junction
γ_d = dry adiabatic lapse rate



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3						1	8.3	.9
ENE	25.0						3	25.0	1.3
E	8.3						1	8.3	.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						3	25.0	1.1
WSW		8.3					1	8.3	3.1
W	8.3						1	8.3	2.7
WNW	8.3	8.3					2	16.6	3.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	83.2	16.6					12		1.8

SURFACE WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	.9
NE		18.1					2	18.1	4.2
ENE	9.0						1	9.0	1.8
E							0	0.0	
ESE	9.0						1	9.0	2.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		9.0					1	9.0	4.5
WNW	9.0	9.0	27.2				5	45.2	5.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.0	36.1	27.2				11		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3	8.3					2	16.6	3.4
NE							0	0.0	
ENE	16.6						2	16.6	.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		8.3					1	8.3	3.8
S		8.3					1	8.3	4.1
SSW							0	0.0	
SW		16.6					2	16.6	4.0
WSW	8.3	8.3					2	16.6	3.1
W			8.3				1	8.3	7.1
WNW		8.3					1	8.3	5.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	58.1	8.3				12		3.6

100 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	8.5
NNE							0	0.0	
NE	9.0		18.1				3	27.1	5.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	4.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			18.1	18.1			4	36.2	9.8
WNW					9.0		1	9.0	23.2
NW							0	0.0	
NNW	9.0						1	9.0	2.9
CALM							0	0.0	
COL. TOTALS	18.0	9.0	45.2	18.1	9.0		11		8.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3						1	8.3	2.2
ENE	8.3						1	8.3	1.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	2.5
S		8.3					1	8.3	4.8
SSW			8.3				1	8.3	8.5
SW		8.3					1	8.3	3.3
WSW		8.3					1	8.3	3.6
W	8.3			8.3			2	16.6	6.4
WNW	8.3			8.3			2	16.6	6.6
NW		8.3					1	8.3	4.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	33.2	8.3	16.6			12		4.7

200 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	8.5
NNE	9.0						1	9.0	2.2
NE		9.0	9.0				2	18.0	6.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		9.0					1	9.0	5.7
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				9.0			1	9.0	10.5
W			18.1	9.0	9.0		4	36.1	11.3
WNW							0	0.0	
NW	9.0						1	9.0	2.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	18.0	36.1	18.0	9.0		11		8.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		8.3					1	8.3	3.5
NE							0	0.0	
ENE	8.3						1	8.3	1.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.6
S		8.3					1	8.3	3.5
SSW			8.3	8.3			2	16.6	10.5
SW							0	0.0	
WSW			8.3				1	8.3	7.4
W							0	0.0	
WNW	8.3	8.3	16.6				4	33.2	6.5
NW	8.3						1	8.3	2.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	24.9	33.2	8.3			12		5.5

300 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0	9.0					2	18.0	2.1
NNE				9.0			1	9.0	10.7
NE		9.0					1	9.0	5.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	3.1
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			9.0				1	9.0	9.1
W						9.0	1	9.0	37.7
WNW		9.0	9.0	9.0			3	27.0	8.7
NW	9.0						1	9.0	2.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	36.0	18.0	18.0		9.0	11		9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		8.3					1	8.3	4.9
NE	8.3						1	8.3	2.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.0
S	8.3						1	8.3	2.7
SSW		8.3					1	8.3	4.9
SW			8.3				1	8.3	6.4
WSW			8.3				1	8.3	7.0
W							0	0.0	
WNW	8.3	8.3	8.3	8.3			4	33.2	6.5
NW			8.3				1	8.3	9.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	24.9	33.2	8.3			12		5.4

500 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			18.1	9.0			3	27.1	8.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	2.6
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				9.0			1	9.0	14.0
W	9.0	9.0				9.0	3	27.0	16.4
WNW	9.0		9.0				2	18.0	6.1
NW		9.0					1	9.0	4.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	18.0	27.1	18.0		9.0	11		9.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		8.3					1	8.3	3.1
NE		8.3					1	8.3	3.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.1
S							0	0.0	
SSW							0	0.0	
SW		8.3	8.3				2	16.6	6.8
WSW		16.6					2	16.6	5.4
W		16.6					2	16.6	4.5
WNW			16.6				2	16.6	8.6
NW			8.3				1	8.3	6.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	58.1	33.2				12		5.4

750 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.5
NNE			11.1				1	11.1	6.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1					1	11.1	4.6
W			11.1		11.1	11.1	3	33.3	25.4
WNW			11.1				1	11.1	6.4
NW		11.1	11.1				2	22.2	5.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	22.2	44.4		11.1	11.1	9		12.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		8.3					1	8.3	4.1
E	8.3						1	8.3	2.1
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			8.3	16.6			3	24.9	11.4
WSW		8.3					1	8.3	3.9
W			8.3				1	8.3	9.3
WNW							0	0.0	
NW		16.6	8.3	8.3			4	33.2	6.6
NNW	8.3						1	8.3	2.6
CALM							0	0.0	
COL. TOTALS	16.6	33.2	24.9	24.9			12		6.9

1000 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		14.2					1	14.2	5.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		14.2				14.2	2	28.4	25.9
WNW	14.2	14.2					2	28.4	3.9
NW		28.5					2	28.5	5.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	71.1				14.2	7		10.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			18.1				2	18.1	9.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			9.0				1	9.0	6.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				9.0			1	9.0	12.2
SW				9.0			1	9.0	12.3
WSW			9.0				1	9.0	6.0
W		9.0	9.0	9.0			3	27.0	8.3
WNW							0	0.0	
NW							0	0.0	
NNW		9.0		9.0			2	18.0	8.5
CALM							0	0.0	
COL. TOTALS		18.0	45.1	36.0			11		8.9

1500 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			16.6				1	16.6	7.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		16.6					1	16.6	4.5
W					16.6	33.3	3	49.9	37.5
WNW							0	0.0	
NW		16.6					1	16.6	5.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.2	16.6		16.6	33.3	6		21.7

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MAY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				14.2			1	14.2	12.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				14.2			1	14.2	15.8
SW				28.5			2	28.5	15.0
WSW							0	0.0	
W				14.2	14.2		2	28.4	16.4
WNW							0	0.0	
NW							0	0.0	
NNW				14.2			1	14.2	15.3
CALM							0	0.0	
COL. TOTALS				85.3	14.2		7		15.1

2000 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE					25.0		1	25.0	16.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			25.0			50.0	3	75.0	28.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			25.0		25.0	50.0	4		25.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	4.5						1	4.5	.9
ESE							0	0.0	
SE							0	0.0	
SSE	4.5						1	4.5	1.8
S	4.5	4.5					2	9.0	2.0
SSW	4.5	4.5					2	9.0	3.6
SW		4.5					1	4.5	3.3
WSW	4.5	13.6					4	18.1	3.4
W	18.1	22.7					9	40.8	2.6
WNW	9.0						2	9.0	1.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.6	49.8					22		2.6

SURFACE WINDS AFTERNOON JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	2.7
NNE	11.1	5.5					3	16.6	2.5
NE							0	0.0	
ENE		5.5					1	5.5	3.1
E	5.5	5.5					2	11.0	2.9
ESE							0	0.0	
SE			5.5				1	5.5	6.3
SSE							0	0.0	
S	5.5						1	5.5	2.7
SSW	5.5	5.5	5.5				3	16.5	4.3
SW			11.1				2	11.1	7.3
WSW							0	0.0	
W							0	0.0	
WNW		11.1	5.5				3	16.6	6.1
NW		5.5					1	5.5	5.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.1	38.6	27.6				18		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	4.5	4.5					2	9.0	3.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	4.5						1	4.5	.8
SSE	4.5						1	4.5	1.9
S		9.0					2	9.0	4.9
SSW		4.5					1	4.5	3.5
SW	4.5	31.8	4.5				9	40.8	4.1
WSW	4.5		4.5				2	9.0	4.1
W	9.0						2	9.0	1.6
WNW							0	0.0	
NW		4.5					1	4.5	5.7
NNW	4.5						1	4.5	1.6
CALM							0	0.0	
COL. TOTALS	36.0	54.3	9.0				22		3.5

100 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5	5.5					2	11.0	3.1
NNE	5.5						1	5.5	1.3
NE		16.6					3	16.6	3.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	5.5			5.5			2	11.0	6.2
SSE							0	0.0	
S							0	0.0	
SSW		11.1	5.5				3	16.6	5.4
SW		11.1					2	11.1	5.4
WSW							0	0.0	
W	5.5		5.5				2	11.0	3.9
WNW		5.5		5.5			2	11.0	6.7
NW		5.5					1	5.5	5.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.0	55.3	11.0	11.0			18		4.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					2	9.0	4.5
NNE							0	0.0	
NE							0	0.0	
ENE	4.5						1	4.5	.4
E	4.5						1	4.5	.9
ESE							0	0.0	
SE	4.5						1	4.5	.8
SSE							0	0.0	
S		4.5	9.0				3	13.5	6.0
SSW		4.5					1	4.5	4.2
SW	4.5	9.0					3	13.5	3.5
WSW	9.0	4.5					3	13.5	3.7
W	13.6	9.0					5	22.6	2.4
WNW							0	0.0	
NW	4.5	4.5					2	9.0	2.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	45.0	9.0				22		3.2

200 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	2.3
NNE	5.5	5.5		5.5			3	16.5	6.2
NE		5.5	5.5				2	11.0	6.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				5.5			1	5.5	15.4
SSE		5.5					1	5.5	3.0
S							0	0.0	
SSW		11.1					2	11.1	4.2
SW		5.5		5.5	5.5		3	16.5	12.2
WSW							0	0.0	
W	5.5						1	5.5	1.3
WNW		5.5	5.5		5.5		3	16.5	9.5
NW	5.5						1	5.5	1.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.0	38.6	11.0	16.5	11.0		18		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	4.5						1	4.5	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	4.5						1	4.5	.6
ESE							0	0.0	
SE							0	0.0	
SSE	4.5						1	4.5	1.5
S	4.5		9.0	4.5			4	18.0	6.7
SSW		9.0					2	9.0	3.5
SW	13.6	4.5					4	18.1	2.5
WSW	4.5	4.5					2	9.0	2.0
W	4.5	4.5					2	9.0	2.9
WNW		9.0					2	9.0	5.4
NW	4.5	4.5					2	9.0	2.9
NNW	4.5						1	4.5	1.5
CALM							0	0.0	
COL. TOTALS	49.6	36.0	9.0	4.5			22		3.5

300 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		5.5					1	5.5	4.9
NNE	5.5						1	5.5	2.4
NE	5.5	11.1					3	16.6	4.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			5.5				1	5.5	7.6
S	5.5						1	5.5	2.7
SSW					5.5		1	5.5	22.4
SW	5.5	5.5		5.5			3	16.5	7.8
WSW		5.5					1	5.5	3.0
W	5.5		5.5				2	11.0	5.3
WNW	5.5	5.5	5.5				3	16.5	4.7
NW							0	0.0	
NNW	5.5						1	5.5	2.8
CALM							0	0.0	
COL. TOTALS	38.5	33.1	16.5	5.5	5.5		18		5.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	4.5						1	4.5	2.5
NE	4.5						1	4.5	1.0
ENE	4.5						1	4.5	.7
E	4.5						1	4.5	1.3
ESE							0	0.0	
SE	4.5						1	4.5	2.6
SSE							0	0.0	
S		4.5	9.0				3	13.5	5.8
SSW	4.5		4.5				2	9.0	5.1
SW		4.5		4.5			2	9.0	9.7
WSW							0	0.0	
W	4.5	9.0	13.6				6	27.1	5.8
WNW		4.5					1	4.5	4.7
NW	4.5	4.5	4.5				3	13.5	5.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.0	27.0	31.6	4.5			22		5.0

500 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.5	5.5					2	11.0	4.0
NE			5.5				1	5.5	9.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			5.5				1	5.5	8.2
S	5.5	5.5	5.5				3	16.5	4.4
SSW					5.5		1	5.5	17.3
SW	11.1	5.5		5.5			4	22.1	5.6
WSW		5.5					1	5.5	5.9
W							0	0.0	
WNW		16.6	5.5		5.5		5	27.6	8.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.1	38.6	22.0	5.5	11.0		18		7.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		5.0					1	5.0	4.2
NE							0	0.0	
ENE	5.0						1	5.0	.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	20.0	5.0					5	25.0	2.2
S			5.0				1	5.0	8.3
SSW				10.0			2	10.0	12.0
SW			5.0				1	5.0	9.5
WSW							0	0.0	
W	5.0	10.0	10.0	10.0			7	35.0	6.6
WNW			10.0				2	10.0	7.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	20.0	30.0	20.0			20		5.9

750 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				2	11.1	8.8
NE							0	0.0	
ENE	5.5						1	5.5	2.9
E							0	0.0	
ESE							0	0.0	
SE	5.5		5.5				2	11.0	4.6
SSE							0	0.0	
S	5.5		5.5				2	11.0	4.9
SSW			5.5		5.5		2	11.0	15.9
SW	5.5		5.5				2	11.0	4.6
WSW							0	0.0	
W			5.5				1	5.5	8.4
WNW	5.5	11.1	5.5			5.5	5	27.6	10.7
NW			5.5				1	5.5	7.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.5	11.1	49.6		5.5	5.5	18		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.0						1	5.0	1.8
NNE							0	0.0	
NE	5.0						1	5.0	1.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			5.0				1	5.0	8.4
SSE	5.0		10.0				3	15.0	5.1
S		5.0					1	5.0	5.1
SSW					5.0		1	5.0	16.2
SW	5.0		5.0	5.0			3	15.0	7.8
WSW		5.0					1	5.0	4.9
W		10.0	10.0	5.0			5	25.0	8.1
WNW			5.0	5.0			2	10.0	9.4
NW		5.0					1	5.0	5.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	25.0	35.0	15.0	5.0		20		7.1

1000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				5.5			1	5.5	14.4
NNE							0	0.0	
NE	5.5						1	5.5	2.3
ENE		5.5					1	5.5	3.5
E							0	0.0	
ESE							0	0.0	
SE				5.5			1	5.5	10.6
SSE							0	0.0	
S		5.5					1	5.5	4.7
SSW			5.5			5.5	2	11.0	17.8
SW		5.5	5.5				2	11.0	7.0
WSW	5.5	5.5					2	11.0	2.5
W	5.5		5.5				2	11.0	5.0
WNW			5.5	11.1			3	16.6	10.3
NW		5.5					1	5.5	5.2
NNW			5.5				1	5.5	6.3
CALM							0	0.0	
COL. TOTALS	16.5	27.5	27.5	22.1		5.5	18		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			5.2				1	5.2	4.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			5.2				1	5.2	7.9
S			5.2				1	5.2	6.9
SSW			10.5				2	10.5	8.3
SW			5.2		5.2		2	10.4	15.8
WSW			5.2				1	5.2	7.2
W		5.2	10.5				3	15.7	6.3
WNW	5.2	5.2	5.2	5.2	5.2		5	26.0	8.1
NW			10.5				2	10.5	7.4
NNW			5.2				1	5.2	6.8
CALM							0	0.0	
COL. TOTALS	5.2	15.6	62.7	5.2	10.4		19		8.2

1500 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	5.5						1	5.5	1.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			5.5			5.5	2	11.0	11.1
SSE							0	0.0	
S							0	0.0	
SSW	5.5				5.5	5.5	3	16.5	12.5
SW	5.5	5.5					2	11.0	2.6
WSW		5.5	5.5	5.5			3	16.5	9.0
W			10.6				3	16.6	6.5
WNW	5.5			5.5			2	11.0	8.0
NW					5.5		1	5.5	16.2
NNW		5.5					1	5.5	3.1
CALM							0	0.0	
COL. TOTALS	22.0	22.0	22.1	16.5	16.5		18		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		5.5					1	5.5	5.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			5.5	5.5			2	11.0	9.6
SSW		5.5	5.5	5.5			3	16.5	8.3
SW				5.5			1	5.5	13.6
WSW		5.5		5.5	11.1		4	22.1	14.0
W			5.5				1	5.5	7.1
WNW			5.5				1	5.5	7.9
NW			11.1	11.1			4	22.2	9.9
NNW			5.5				1	5.5	9.1
CALM							0	0.0	
COL. TOTALS		16.5	38.6	33.1	11.1		18		10.2

2000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	6.2						1	6.2	1.5
SSW							0	0.0	
SW		6.2	12.5	6.2	12.5		6	37.4	12.7
WSW		6.2	12.5				3	18.7	6.4
W				6.2			1	6.2	10.7
WNW	6.2	6.2		12.5			4	24.9	8.0
NW					6.2		1	6.2	18.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.4	18.6	25.0	24.9	18.7		16		9.8

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JUNE 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THRCUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.5						1	5.5	.4
NE	5.5						1	5.5	.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	5.5						1	5.5	.9
SSW							0	0.0	
SW							0	0.0	
WSW	11.1	11.1					4	22.2	2.6
W	27.7	27.7					10	55.4	2.6
WNW	5.5						1	5.5	2.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.8	38.8					18		2.3

SURFACE WINDS AFTERNOON JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						2	16.6	1.5
NNE		8.3					1	8.3	4.5
NE	8.3						1	8.3	2.7
ENE	8.3						1	8.3	1.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	2.2
S							0	0.0	
SSW							0	0.0	
SW			8.3	8.3			2	16.6	8.5
WSW							0	0.0	
W							0	0.0	
WNW		8.3	8.3				2	16.6	7.1
NW			8.3				1	8.3	6.3
NNW	8.3						1	8.3	.9
CALM							0	0.0	
COL. TOTALS	49.8	16.6	24.9	8.3			12		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	1.5
NNE		5.5					1	5.5	3.2
NE	5.5						1	5.5	1.1
ENE							0	0.0	
E	5.5						1	5.5	.6
ESE							0	0.0	
SE	5.5						1	5.5	1.8
SSE							0	0.0	
S							0	0.0	
SSW	5.5						1	5.5	1.7
SW	5.5	22.2					5	27.7	3.6
WSW		5.5					1	5.5	3.4
W	5.5	5.5					2	11.0	2.9
WNW	5.5						1	5.5	.7
NW	11.1						2	11.1	1.5
NNW	5.5						1	5.5	1.2
CALM							0	0.0	
COL. TOTALS	60.6	38.7					18		2.3

100 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.5
NNE			8.3				1	8.3	6.3
NE	8.3						1	8.3	2.6
ENE	16.6						2	16.6	2.3
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	2.3
SSE							0	0.0	
S							0	0.0	
SSW				8.3			1	8.3	10.5
SW			8.3				1	8.3	6.2
WSW							0	0.0	
W							0	0.0	
WNW				16.6			2	16.6	12.3
NW	8.3						1	8.3	2.9
NNW	8.3						1	8.3	1.0
CALM							0	0.0	
COL. TOTALS	58.1		16.6	24.9			12		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	.5
NNE	16.6	5.5					4	22.1	2.3
NE	5.5						1	5.5	1.4
ENE							0	0.0	
E	5.5						1	5.5	1.2
ESE	5.5						1	5.5	.7
SE							0	0.0	
SSE							0	0.0	
S	16.6						3	16.6	1.4
SSW	11.1	11.1					4	22.2	2.7
SW	5.5						1	5.5	.8
WSW							0	0.0	
W							0	0.0	
WNW		5.5					1	5.5	3.8
NW							0	0.0	
NNW	5.5						1	5.5	1.1
CALM							0	0.0	
COL. TOTALS	77.3	22.1					18		1.8

200 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.4
NNE	8.3		16.6				3	24.9	4.6
NE		8.3					1	8.3	4.3
ENE	8.3						1	8.3	1.7
E							0	0.0	
ESE		8.3					1	8.3	3.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				8.3			1	8.3	11.9
WSW	8.3						1	8.3	1.7
W							0	0.0	
WNW			8.3	8.3		8.3	3	24.9	18.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	16.6	24.9	16.6		8.3	12		7.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	.8
NNE			5.5				1	5.5	8.5
NE	11.1						2	11.1	2.6
ENE	11.1						2	11.1	1.1
E							0	0.0	
ESE							0	0.0	
SE	5.5	5.5					2	11.0	3.0
SSE	5.5						1	5.5	1.0
S							0	0.0	
SSW	11.1						2	11.1	2.1
SW	11.1	5.5					3	16.6	2.5
WSW	11.1						2	11.1	1.1
W							0	0.0	
WNW			5.5				1	5.5	6.7
NW	5.5						1	5.5	1.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	77.5	11.0	11.0				18		2.5

300 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						2	16.6	1.2
NNE		16.6	8.3				3	24.9	5.5
NE	8.3						1	8.3	2.3
ENE	8.3						1	8.3	1.6
E							0	0.0	
ESE		8.3					1	8.3	3.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		8.3			8.3		2	16.6	14.1
WSW							0	0.0	
W							0	0.0	
WNW			8.3		8.3		2	16.6	14.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	33.2	16.6		16.6		12		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						3	16.6	2.2
NNE	5.5	5.5					2	11.0	3.1
NE							0	0.0	
ENE	5.5						1	5.5	1.6
E	5.5						1	5.5	2.6
ESE							0	0.0	
SE		5.5					1	5.5	5.8
SSE							0	0.0	
S	5.5	5.5					2	11.0	2.4
SSW	5.5						1	5.5	1.4
SW	11.1	5.5					3	16.6	2.2
WSW							0	0.0	
W		11.1					2	11.1	4.1
WNW	5.5		5.5				2	11.0	4.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.7	33.1	5.5				18		2.9

500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3	8.3					2	16.6	2.9
NE			8.3				1	8.3	6.0
ENE							0	0.0	
E			8.3				1	8.3	6.8
ESE		8.3					1	8.3	4.2
SE	8.3						1	8.3	2.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	8.3					8.3	2	16.6	21.5
WSW							0	0.0	
W							0	0.0	
WNW	8.3	8.3			16.6		4	33.2	10.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	24.9	16.6		16.6	8.3	12		9.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			5.8				1	5.8	6.6
NE	5.8						1	5.8	2.1
ENE	5.8	5.8					2	11.6	2.3
E							0	0.0	
ESE	5.8						1	5.8	.6
SE	5.8						1	5.8	.9
SSE			5.8				1	5.8	7.1
S		5.8					1	5.8	5.4
SSW	5.8						1	5.8	2.4
SW							0	0.0	
WSW		5.8					1	5.8	3.8
W	17.6	5.8	5.8				5	29.2	3.6
WNW		5.8					1	5.8	3.9
NW							0	0.0	
NNW	5.8						1	5.8	.8
CALM							0	0.0	
COL. TOTALS	52.4	29.0	17.4				17		3.3

750 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.5
NE				8.3		8.3	2	16.6	23.6
ENE							0	0.0	
E		8.3			8.3		2	16.6	11.3
ESE	8.3						1	8.3	1.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	8.3						1	8.3	2.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW					8.3	8.3	2	16.6	26.0
NW	8.3	8.3	8.3				3	24.9	3.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	16.6	8.3	8.3	16.6	16.6	12		11.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		6.2					1	6.2	4.5
ENE							0	0.0	
E	6.2	6.2					2	12.4	3.8
ESE							0	0.0	
SE							0	0.0	
SSE		6.2					1	6.2	4.2
S			6.2				1	6.2	6.0
SSW		12.5					2	12.5	4.1
SW		6.2					1	6.2	5.5
WSW		6.2					1	6.2	3.9
W		12.5	6.2				3	18.7	5.0
WNW	6.2	12.5		6.2			4	24.9	4.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.4	68.5	12.4	6.2			16.		4.6

1000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE					9.0		1	9.0	24.5
ENE							0	0.0	
E		9.0			9.0		2	18.0	13.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	2.0
SW		9.0					1	9.0	4.1
WSW		9.0					1	9.0	3.9
W	9.0	9.0	9.0				3	27.0	5.3
WNW	9.0				9.0		2	18.0	11.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	36.0	9.0		27.0		11		9.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			6.6				1	6.6	6.1
ESE		6.6	6.6				2	13.2	7.1
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				13.3			2	13.3	12.5
SW							0	0.0	
WSW	6.6	6.6					2	13.2	3.8
W		13.3	6.6	6.6			4	26.5	7.9
WNW			6.6	6.6			2	13.2	9.3
NW		6.6	6.6				2	13.2	6.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	6.6	33.1	33.0	26.5			15		7.7

1500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				11.1			1	11.1	13.6
ENE							0	0.0	
E							0	0.0	
ESE	11.1		11.1				2	22.2	5.8
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	1.1
SSW							0	0.0	
SW			11.1	11.1			2	22.2	8.7
WSW			11.1				1	11.1	7.5
W		11.1		11.1			2	22.2	9.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	33.3	33.3			9		7.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING JULY.1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			8.3				1	8.3	7.2
ESE		8.3					1	8.3	4.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				8.3			1	8.3	15.5
SW				8.3			1	8.3	13.6
WSW	8.3			8.3			2	16.6	6.1
W				16.6			2	16.6	12.4
WNW				25.0			3	25.0	11.6
NW		8.3					1	8.3	5.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	16.6	8.3	66.5			12		9.8

2000 METER LEVEL WINDS AFTERNOON JULY.1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE				12.5			1	12.5	12.5
E						12.5	1	12.5	37.7
ESE							0	0.0	
SE							0	0.0	
SSE	12.5						1	12.5	1.4
S							0	0.0	
SSW				12.5			1	12.5	10.0
SW			12.5	12.5			2	25.0	9.2
WSW							0	0.0	
W			12.5				1	12.5	7.8
WNW			12.5				1	12.5	6.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5		37.5	37.5		12.5	8		11.8

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JULY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	5.0						1	5.0	.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	5.0						1	5.0	2.7
SW	15.0						3	15.0	.4
WSW	20.0	15.0					7	35.0	2.9
W	35.0						7	35.0	2.0
WNW							0	0.0	
NW							0	0.0	
NNW	5.0						1	5.0	.9
CALM							0	0.0	
COL. TOTALS	85.0	15.0					20		2.0

SURFACE WINDS AFTERNCON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	23.5	5.8					5	29.3	2.6
NE	17.6						3	17.6	2.6
ENE	5.8						1	5.8	2.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	5.8						1	5.8	.4
S							0	0.0	
SSW	5.8		5.8				2	11.6	3.8
SW			5.8				1	5.8	6.7
WSW							0	0.0	
W	11.7						2	11.7	2.2
WNW		5.8					1	5.8	4.5
NW							0	0.0	
NNW		5.8					1	5.8	4.5
CALM							0	0.0	
COL. TOTALS	70.2	17.4	11.6				17		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		5.0					1	5.0	3.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.0					1	5.0	5.1
SW	10.0	10.0					4	20.0	3.2
WSW	15.0	5.0	5.0				5	25.0	4.2
W	20.0	10.0					6	30.0	2.7
WNW							0	0.0	
NW	5.0						1	5.0	2.8
NNW	10.0						2	10.0	1.3
CALM							0	0.0	
COL. TOTALS	60.0	35.0	5.0				20		3.2

100 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			5.8				1	5.8	7.3
NNE		17.6					3	17.6	4.1
NE	17.6	5.8					4	23.4	2.9
ENE		5.8					1	5.8	4.4
E							0	0.0	
ESE	5.8						1	5.8	1.1
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.8	5.8				2	11.6	5.3
SW		5.8					1	5.8	4.5
WSW							0	0.0	
W		11.7					2	11.7	3.7
WNW			5.8	5.8			2	11.6	11.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.4	52.5	17.4	5.8			17		4.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		5.0					1	5.0	5.1
NE	5.0						1	5.0	.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	5.0	20.0					5	25.0	4.2
SW	15.0	5.0					4	20.0	2.3
WSW	5.0						1	5.0	2.4
W	10.0	5.0					3	15.0	2.9
WNW			5.0				1	5.0	7.9
NW	5.0						1	5.0	1.3
NNW	15.0						3	15.0	1.6
CALM							0	0.0	
COL. TOTALS	60.0	35.0	5.0				20		3.0

200 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.8	23.5	5.8				6	35.1	4.6
NE		11.7					2	11.7	4.0
ENE		5.8					1	5.8	3.5
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.8					1	5.8	3.2
SW		5.8					1	5.8	5.5
WSW	5.8						1	5.8	2.9
W	5.8	11.7	5.8				4	23.3	4.8
WNW							0	0.0	
NW							0	0.0	
NNW	5.8						1	5.8	2.7
CALM							0	0.0	
COL. TOTALS	23.2	64.3	11.6				17		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		5.0					1	5.0	3.7
NNE	5.0	5.0					2	10.0	3.0
NE							0	0.0	
ENE							0	0.0	
E	5.0						1	5.0	1.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						2	10.0	1.2
SSW	10.0	10.0	5.0				5	25.0	3.8
SW	15.0						3	15.0	2.3
WSW		5.0					1	5.0	5.8
W							0	0.0	
WNW		5.0	5.0				2	10.0	5.5
NW	5.0						1	5.0	1.0
NNW	10.0						2	10.0	1.0
CALM							0	0.0	
COL. TOTALS	60.0	30.0	10.0				20		2.9

300 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.7					2	11.7	3.5
NNE	5.8	5.8	17.6				5	29.2	5.7
NE	5.8	11.7					3	17.5	3.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.8					1	5.8	3.2
SW		5.8		5.8			2	11.6	7.4
WSW	5.8						1	5.8	2.8
W	5.8	5.8					2	11.6	3.1
WNW					5.8		1	5.8	16.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.2	46.6	17.6	5.8	5.8		17		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0	5.0					3	15.0	2.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	5.0						1	5.0	1.2
SSE							0	0.0	
S							0	0.0	
SSW		10.0	5.0				3	15.0	5.7
SW	10.0						2	10.0	2.6
WSW	10.0	10.0					4	20.0	3.3
W	5.0		10.0				3	15.0	5.6
WNW	5.0		5.0				2	10.0	5.1
NW	5.0						1	5.0	2.0
NNW	5.0						1	5.0	.3
CALM							0	0.0	
COL. TOTALS	55.0	25.0	20.0				20		3.7

500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.7					2	11.7	4.3
NNE		5.8	11.7				3	17.5	6.1
NE		5.8					1	5.8	3.3
ENE	11.7						2	11.7	1.1
E	5.8						1	5.8	.1
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.8					1	5.8	4.0
SW	5.8			5.8			2	11.6	8.0
WSW				5.8			1	5.8	12.8
W							0	0.0	
WNW			5.8	5.8			2	11.6	11.0
NW							0	0.0	
NNW	11.7						2	11.7	1.5
CALM							0	0.0	
COL. TOTALS	35.0	29.1	17.5	17.4			17		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.2		5.2				2	10.4	4.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		5.2					1	5.2	5.4
S							0	0.0	
SSW	10.5	5.2	5.2				4	20.9	4.0
SW	10.5	5.2					3	15.7	2.7
WSW							0	0.0	
W			10.5	5.2			3	15.7	8.9
WNW	5.2	10.5	5.2	5.2			5	26.1	5.8
NW							0	0.0	
NNW	5.2						1	5.2	2.8
CALM							0	0.0	
COL. TOTALS	36.6	26.1	26.1	10.4			19		5.1

750 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		5.8					1	5.8	4.8
NNE	5.8	5.8	5.8				3	17.4	4.7
NE							0	0.0	
ENE							0	0.0	
E			5.8				1	5.8	8.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			5.8				1	5.8	9.6
SW	5.8			5.8			2	11.6	8.2
WSW	5.8				5.8		2	11.6	12.5
W	11.7		5.8				3	17.5	3.9
WNW				5.8			1	5.8	13.3
NW	5.8	5.8					2	11.6	3.2
NNW	5.8						1	5.8	1.9
CALM							0	0.0	
COL. TOTALS	40.7	17.4	23.2	11.6	5.8		17		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	1.9
NNE							0	0.0	
NE						5.5	1	5.5	72.4
ENE		5.5					1	5.5	3.7
E	11.1						2	11.1	1.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.5					1	5.5	4.2
SW	11.1	11.1	5.5				5	27.7	4.3
WSW	11.1		5.5				3	16.6	3.6
W	5.5		11.1				3	16.6	5.7
WNW				5.5			1	5.5	14.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.3	22.1	22.1	5.5		5.5	18		8.2

1000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	6.2						1	6.2	.3
NNE		6.2					1	6.2	5.2
NE	6.2						1	6.2	1.9
ENE							0	0.0	
E							0	0.0	
ESE	6.2						1	6.2	.8
SE							0	0.0	
SSE							0	0.0	
S	6.2						1	6.2	2.8
SSW					6.2		1	6.2	19.3
SW				6.2			1	6.2	14.6
WSW		12.5	6.2			6.2	4	24.9	20.8
W	6.2						1	6.2	2.5
WNW	12.5	6.2	6.2				4	24.9	4.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	43.5	24.9	12.4	6.2	6.2	6.2	16		9.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.8						1	5.8	2.8
NE							0	0.0	
ENE						5.8	1	5.8	92.5
E							0	0.0	
ESE				5.8			1	5.8	13.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.8					1	5.8	3.6
SW				5.8			1	5.8	14.6
WSW		17.6	11.7				5	29.3	5.9
W	5.8	5.8	5.8				3	17.4	5.2
WNW	5.8			11.7			3	17.5	8.6
NW		5.8					1	5.8	4.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	17.4	35.0	17.5	23.3		5.8	17		11.9

1500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		8.3					1	8.3	3.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			8.3	8.3		8.3	3	24.9	18.4
WSW	8.3		8.3				2	16.6	4.2
W		8.3	8.3				2	16.6	5.5
WNW	8.3	8.3	16.6				4	33.2	5.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	24.9	41.5	8.3		8.3	12		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

3000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE	6.6						1	6.6	2.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			6.6				1	6.6	9.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		6.6					1	6.6	3.8
SW				6.6			1	6.6	14.0
WSW				6.6	13.3		3	19.9	16.0
W		6.6	6.6	6.6			3	19.8	8.9
WNW			13.3	6.6			3	19.9	9.5
NW			13.3				2	13.3	7.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	6.6	13.2	39.8	26.4	13.3		15		9.9

3000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE					9.0		1	9.0	23.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			9.0				1	9.0	6.4
SSW	9.0						1	9.0	2.8
SW				9.0	9.0		2	18.0	17.5
WSW		9.0					1	9.0	3.1
W			9.0				1	9.0	7.2
WNW			18.1	9.0			3	27.1	9.8
NW				9.0			1	9.0	10.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	9.0	36.1	27.0	18.0		11		10.6

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF AUGUST 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) **********											TOTAL
	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	
001-100	6.4		9.6	3.2	9.6	3.2	6.4	9.6				48.0
101-250	12.9		3.2	6.4	6.4	3.2	3.2					35.3
251-500	3.2	3.2										6.4
501-750												
TOTAL	22.5	3.2	12.8	9.6	16.0	6.4	9.6	9.6				
NO INVERSION												9.0
								TOTAL NO. OF OCCURENCES				28
INVERSION TYPE												
1			3.5	7.1	7.1	3.5	7.1	7.1				35.4
2	3.5		7.1	3.5	3.5	3.5	3.5	3.5				28.1
3	14.2	3.5	3.5		3.5							24.7
4	7.1											7.1
5					3.5							3.5

MONTH OF AUGUST 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) **********											TOTAL
	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	
001-100				6.2	18.7	6.2	25.0					56.1
101-250					12.5							12.5
251-500						6.2						6.2
501-750												
TOTAL				6.2	31.2	12.4	25.0					
NO INVERSION												25.0
								TOTAL NO. OF OCCURENCES				12
INVERSION TYPE												
1				8.3	25.0	16.6	25.0					74.9
3					8.3		8.3					16.6
2					8.3							8.3
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR AUGUST 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	6	0
101- 250	1	3
251- 500	1	3
501- 750	1	2
751-1000	0	1
1001-1500	1	0
>1500	1	4
TOTAL	11	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.3	6.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.56	-01.17

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						2	14.2	.3
NE							0	0.0	
ENE							0	0.0	
E	7.1						1	7.1	.4
ESE							0	0.0	
SE							0	0.0	
SSE		7.1					1	7.1	3.6
S		7.1					1	7.1	3.1
SSW	7.1						1	7.1	1.8
SW	7.1	7.1	7.1				3	21.3	4.0
WSW	14.2						2	14.2	1.5
W							0	0.0	
WNW	21.4						3	21.4	1.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	71.1	21.3	7.1				14		1.9

SURFACE WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	23.0						3	23.0	1.6
ESE							0	0.0	
SE							0	0.0	
SSE		15.3					2	15.3	4.5
S		7.6					1	7.6	3.6
SSW		15.3	7.6				3	22.9	5.7
SW		7.6	7.6				2	15.2	5.8
WSW							0	0.0	
W		15.3					2	15.3	4.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.0	61.1	15.2				13		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	14.2						2	14.2	2.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	7.1						1	7.1	.7
SE							0	0.0	
SSE		7.1					1	7.1	4.6
S			7.1				1	7.1	6.8
SSW		7.1					1	7.1	3.7
SW	7.1	7.1	14.2	7.1			5	35.5	6.2
WSW		7.1					1	7.1	3.5
W			7.1				1	7.1	6.7
WNW	7.1						1	7.1	2.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	35.5	28.4	28.4	7.1			14		4.5

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	15.3						2	15.3	1.9
E	7.6						1	7.6	1.9
ESE							0	0.0	
SE			7.6				1	7.6	6.4
SSE			7.6				1	7.6	7.9
S							0	0.0	
SSW		23.0	7.6	15.3			6	45.9	7.4
SW							0	0.0	
WSW							0	0.0	
W				7.6			1	7.6	10.5
WNW				7.6			1	7.6	10.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.9	23.0	22.8	30.5			13		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	7.1						1	7.1	2.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			14.2				2	14.2	8.0
SSW	7.1	14.2	7.1				4	28.4	4.5
SW		14.2	7.1				3	21.3	6.5
WSW	7.1						1	7.1	2.9
W			7.1				1	7.1	8.7
WNW							0	0.0	
NW							0	0.0	
NNW	14.2						2	14.2	1.8
CALM							0	0.0	
COL. TOTALS	35.5	28.4	35.5				14		5.1

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	7.6						1	7.6	2.4
E							0	0.0	
ESE	7.6						1	7.6	2.0
SE		7.6					1	7.6	3.4
SSE				7.6			1	7.6	10.5
S	7.6						1	7.6	1.2
SSW		7.6		30.7			5	38.3	10.8
SW	7.6						1	7.6	2.4
WSW							0	0.0	
W				7.6			1	7.6	10.5
WNW					7.6		1	7.6	19.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.4	15.2		45.9	7.6		13		8.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		7.1					1	7.1	3.1
NE	7.1						1	7.1	2.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			7.1	7.1			2	14.2	11.6
SSW	14.2		14.2	7.1			5	35.5	5.8
SW		14.2	7.1				3	21.3	4.5
WSW							0	0.0	
W	7.1		7.1				2	14.2	5.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	21.4	21.3	35.5	14.2			14		5.8

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	7.6						1	7.6	1.9
ESE	7.6						1	7.6	2.0
SE							0	0.0	
SSE		7.6					1	7.6	4.7
S			7.6				1	7.6	9.7
SSW			15.3	15.3			4	30.6	10.9
SW		7.6	7.6				2	15.2	6.9
WSW			7.6				1	7.6	8.8
W	7.6						1	7.6	1.8
WNW					7.6		1	7.6	28.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.8	15.2	38.1	15.3		7.6	13		7.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	7.1	14.2	7.1	7.1	7.1		6	42.6	7.6
SW	7.1	7.1					2	14.2	3.2
WSW	7.1		7.1				2	14.2	3.9
W		7.1					1	7.1	4.9
WNW		14.2	7.1				3	21.3	5.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	21.3	42.6	21.3	7.1	7.1		14		8.8

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.6						1	7.6	3.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		7.6					1	7.6	3.9
S							0	0.0	
SSW	7.6			7.6			2	15.2	6.7
SW	15.3		15.3	15.3			6	45.9	7.5
WSW							0	0.0	
W			7.6				1	7.6	7.4
WNW					7.6		1	7.6	18.2
NW	7.6						1	7.6	1.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.1	7.6	22.9	22.9	7.6		13		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	15.3			7.6	7.6		4	30.5	8.8
SW			7.6				1	7.6	6.1
WSW	7.6	7.6					2	15.2	2.4
W	7.6	15.3					3	22.9	3.6
WNW		7.6		7.6			2	15.2	8.4
NW	7.6						1	7.6	2.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	38.1	30.5	7.6	15.2	7.6		13		5.8

750 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			8.3				1	8.3	6.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			8.3				1	8.3	7.6
SW				8.3		8.3	2	16.6	18.2
WSW		16.6	16.6	8.3			5	41.5	7.2
W			8.3				1	8.3	7.1
WNW			8.3				1	8.3	6.0
NW		8.3					1	8.3	3.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		24.9	49.8	16.6		8.3	12		8.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW					7.6		1	7.6	24.6
SW		7.6					1	7.6	4.2
WSW		15.3	7.6				3	22.9	5.6
W	7.6		15.3				3	22.9	6.0
WNW		15.3		7.6			3	22.9	6.5
NW		7.6					1	7.6	3.4
NNW	7.6						1	7.6	2.3
CALM							0	0.0	
COL. TOTALS	15.2	45.8	22.9	7.6	7.6		13		6.8

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			8.3	8.3	8.3		3	24.9	12.8
SW			8.3	8.3			2	16.6	9.8
WSW	8.3	8.3					2	16.6	3.7
W							0	0.0	
WNW		16.6					2	16.6	4.5
NW			8.3	8.3			2	16.6	11.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	24.9	24.9	24.9	8.3		12		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	5.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW						8.3	1	8.3	33.5
SW		8.3					1	8.3	4.2
WSW			8.3				1	8.3	8.7
W				8.3			1	8.3	13.9
WNW			16.6	8.3			3	24.9	9.6
NW	8.3	8.3	16.6				4	33.2	5.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	24.9	41.5	16.6		8.3	12		9.7

1500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			9.0				1	9.0	7.3
WSW		9.0	18.1			9.0	4	36.1	12.2
W		9.0	9.0				2	18.0	8.7
WNW		9.0					1	9.0	3.7
NW		9.0		9.0			2	18.0	9.6
NNW			9.0				1	9.0	7.6
CALM							0	0.0	
COL. TOTALS		36.0	45.1	9.0		9.0	11		8.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				11.1			1	11.1	11.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			11.1	22.2			3	33.3	9.7
WSW							0	0.0	
W					11.1		1	11.1	17.0
WNW				11.1			1	11.1	10.2
NW			33.3				3	33.3	7.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			44.4	44.4	11.1		9		9.9

2000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		12.5		12.5		12.5	3	37.5	15.9
WSW			12.5	12.5			2	25.0	10.6
W				25.0			2	25.0	12.4
WNW			12.5				1	12.5	7.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		12.5	25.0	50.0		12.5	8		12.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF SEPTEMBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	13.7	3.4	10.3	3.4	6.8	3.4	6.8	3.4				51.2
101-250	17.2			6.8	3.4		3.4	3.4				34.2
251-500			3.4	6.8								10.2
501-750												
TOTAL	30.9	3.4	13.7	17.0	10.2	3.4	10.2	6.8				
NO INVERSION												3.0
								TOTAL NO. OF OCCURENCES				28
INVERSION TYPE												
1	3.5	3.5	3.5		10.7		7.1	3.5				31.8
2	7.1		10.7	10.7		3.5	3.5	3.5				39.0
3	17.8			7.1								24.9
4	3.5											3.5
5												

MONTH OF SEPTEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100				7.1	21.4		7.1	7.1				42.7
101-250						7.1		7.1				14.2
251-500						7.1						7.1
501-750												
TOTAL				7.1	21.4	14.2	7.1	14.2				
NO INVERSION												35.0
								TOTAL NO. OF OCCURENCES				9
INVERSION TYPE												
1					33.3	11.1	11.1	11.1				66.6
2				11.1		11.1		11.1				33.3
3												
4												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR SEPTEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	1	0
251- 500	3	1
501- 750	3	3
751-1000	0	1
1001-1500	0	1
>1500	1	5
TOTAL	12	11
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.7	7.9
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.47	-01.22

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.0						1	5.0	.9
NNE	5.0						1	5.0	.4
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	5.0						1	5.0	.4
SE							0	0.0	
SSE							0	0.0	
S	5.0	5.0					2	10.0	2.1
SSW	5.0						1	5.0	1.3
SW	15.0		5.0				4	20.0	3.0
WSW	10.0	5.0					3	15.0	2.4
W	5.0	10.0					3	15.0	2.9
WNW	5.0	10.0					3	15.0	3.2
NW							0	0.0	
NNW	5.0						1	5.0	.4
CALM							0	0.0	
COL. TOTALS	65.0	30.0	5.0				20		2.2

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.8	5.8					2	11.6	2.7
NNE	17.6						3	17.6	1.0
NE							0	0.0	
ENE	5.8						1	5.8	2.7
E	5.8						1	5.8	.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	5.8						1	5.8	2.7
SSW	5.8	11.7					3	17.5	3.9
SW		5.8					1	5.8	3.6
WSW		5.8					1	5.8	3.6
W		11.7					2	11.7	5.4
WNW			5.8				1	5.8	8.0
NW							0	0.0	
NNW	5.8						1	5.8	2.2
CALM							0	0.0	
COL. TOTALS	52.4	40.8	5.8				17		3.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	10.0						2	10.0	1.3
E	5.0						1	5.0	1.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				5.0			1	5.0	12.3
SSW	10.0	5.0					3	15.0	2.9
SW	5.0	10.0			5.0		4	20.0	7.2
WSW	5.0	15.0					4	20.0	3.5
W		10.0	5.0				3	15.0	4.8
WNW		5.0	5.0				2	10.0	6.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	35.0	45.0	10.0	5.0	5.0		20		4.7

100 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		5.8					1	5.8	4.5
NNE	17.6	5.8	5.8				5	29.2	3.4
NE	11.7						2	11.7	1.8
ENE	5.8						1	5.8	1.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				17.6			3	17.6	10.5
SW			5.8				1	5.8	6.0
WSW							0	0.0	
W			11.7	11.7			4	23.4	9.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	35.1	11.6	23.3	29.3			17		6.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.0						1	5.0	.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		5.0					1	5.0	3.0
SSE		5.0					1	5.0	5.5
S		5.0		5.0			2	10.0	9.0
SSW	5.0	5.0					2	10.0	3.0
SW	15.0	5.0		5.0			5	25.0	4.6
WSW	5.0	5.0					2	10.0	4.0
W			5.0				1	5.0	7.2
WNW		5.0	10.0	5.0			4	20.0	8.2
NW	5.0						1	5.0	.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	35.0	35.0	15.0	15.0			20		5.2

200 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.8	11.7	5.8				4	23.3	3.8
NE	11.7						2	11.7	1.3
ENE	11.7						2	11.7	2.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			5.8	5.8			2	11.6	12.0
SW	5.8			5.8			2	11.6	7.0
WSW							0	0.0	
W						5.8	1	5.8	31.4
WNW		5.8			5.8	5.8	3	17.4	17.6
NW							0	0.0	
NNW	5.8						1	5.8	.4
CALM							0	0.0	
COL. TOTALS	40.8	17.5	11.6	11.6	5.8	11.6	17		8.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	5.0						1	5.0	1.1
SSW	5.0	5.0					2	10.0	3.1
SW		10.0	5.0				3	15.0	4.9
WSW	5.0	15.0	5.0				5	25.0	4.8
W							0	0.0	
WNW	5.0						1	5.0	.9
NW	5.0	10.0	15.0	5.0	5.0		8	40.0	9.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	40.0	25.0	5.0	5.0		20		6.0

300 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		5.8					1	5.8	3.5
NNE	17.6						3	17.6	1.2
NE	5.8	11.7					3	17.5	3.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			5.8				1	5.8	8.7
SSW		5.8	5.8				2	11.6	6.0
SW			5.8				1	5.8	8.1
WSW				5.8			1	5.8	13.3
W					5.8		1	5.8	17.7
WNW		5.8					1	5.8	4.0
NW	5.8						1	5.8	1.1
NNW	5.8	5.8					2	11.6	2.8
CALM							0	0.0	
COL. TOTALS	35.0	34.9	17.4	5.8	5.8		17		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	5.0						1	5.0	2.2
SW	10.0	10.0			5.0		5	25.0	5.8
WSW	5.0	15.0					4	20.0	3.6
W		10.0	5.0		5.0		4	20.0	8.6
WNW			10.0	5.0	5.0		4	20.0	11.4
NW	5.0						1	5.0	2.8
NNW							0	0.0	
CALM							1	5.0	
COL. TOTALS	25.0	35.0	15.0	5.0	15.0		20		6.4

500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		5.8					1	5.8	3.4
NE							0	0.0	
ENE	5.8				5.8		2	11.6	9.4
E	5.8						1	5.8	2.6
ESE	5.8						1	5.8	.4
SE							0	0.0	
SSE							0	0.0	
S				5.8			1	5.8	12.5
SSW							0	0.0	
SW	5.8						1	5.8	1.5
WSW							0	0.0	
W	5.8	17.6		5.8			5	29.2	5.8
WNW	5.8	5.8					2	11.6	2.6
NW		5.8					1	5.8	3.9
NNW	11.7						2	11.7	2.2
CALM							0	0.0	
COL. TOTALS	46.5	35.0		11.6	5.8		17		4.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			5.2				1	5.2	6.4
S	5.2						1	5.2	2.8
SSW							0	0.0	
SW							0	0.0	
WSW	10.5						2	10.5	2.6
W	5.2	5.2	26.3	10.5			9	47.2	8.4
WNW			15.7	15.7			6	31.4	10.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.9	5.2	47.2	26.2			19		7.9

750 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		6.6					1	6.6	3.3
E							0	0.0	
ESE	6.6						1	6.6	1.0
SE							0	0.0	
SSE		6.6					1	6.6	3.3
S	6.6						1	6.6	1.7
SSW							0	0.0	
SW	6.6	6.6					2	13.2	4.0
WSW		6.6					1	6.6	5.1
W		6.6	6.6				2	13.2	6.5
WNW	6.6		6.6	6.6	6.6		4	26.4	9.6
NW	6.6		6.6				2	13.2	4.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.0	33.0	19.8	6.6	6.6		15		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	5.5						1	5.5	2.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		5.5					1	5.5	4.3
SSW		5.5					1	5.5	4.0
SW							0	0.0	
WSW							0	0.0	
W	5.5	5.5	16.6	5.5	16.6	5.5	10	55.2	13.8
WNW			11.1	16.6			5	27.7	9.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.0	16.5	27.7	22.1	16.6	5.5	18		10.9

1000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	7.1						1	7.1	2.2
WSW		7.1	7.1				2	14.2	5.7
W	7.1	7.1	21.4		7.1		6	42.7	9.3
WNW		7.1	14.2	7.1			4	28.4	8.3
NW		7.1					1	7.1	3.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	28.4	42.7	7.1	7.1		14		7.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		5.8					1	5.8	3.2
WSW							0	0.0	
W		5.8		5.8		11.7	4	23.3	22.0
WNW	5.8	11.7	5.8	11.7	5.8	5.8	8	46.6	12.1
NW			11.7	5.8	5.8		4	23.3	12.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	5.8	23.3	17.5	23.3	11.6	17.5	17		13.9

1500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		7.6		7.6			2	15.2	6.8
W		15.3		7.6	15.3	7.6	6	45.8	18.6
WNW					7.6		1	7.6	16.5
NW			7.6	15.3			3	22.9	10.6
NNW				7.6			1	7.6	11.0
CALM							0	0.0	
COL. TOTALS		22.9	7.6	38.1	22.9	7.6	13		14.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3				8.3	8.3	3	24.9	30.8
WNW			8.3		8.3	8.3	3	24.9	16.5
NW	8.3	8.3	16.6	8.3			5	41.5	7.1
NNW					8.3		1	8.3	18.2
CALM							0	0.0	
COL. TOTALS	16.6	8.3	24.9	8.3	24.9	16.6	12		16.3

2000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				9.0			1	9.0	13.8
WSW							0	0.0	
W		9.0		18.1			3	27.1	12.2
WNW			9.0		9.0		2	18.0	14.4
NW					27.2		3	27.2	19.1
NNW		9.0	9.0				2	18.0	7.4
CALM							0	0.0	
COL. TOTALS		18.0	18.0	27.1	36.2		11		13.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF OCTOBER 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	2.9		1.4	2.9	4.4	4.4	5.8	10.2	1.4			33.4
101-250	17.5		1.4	11.7	2.9	4.4	8.8	7.3				54.1
251-500	4.4			2.9		1.4	2.9					11.6
501-750												
TOTAL	24.9		2.8	17.5	7.3	10.2	17.5	17.5	1.4			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				68

INVERSION TYPE											
1				7.3	2.9	7.3	11.7	11.7	1.4		42.3
2	2.9			5.8	1.4	2.9	5.8	5.8			24.6
3	13.2		2.9	4.4	2.9						23.4
4	8.8										8.8
5											

MONTH OF OCTOBER 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			3.7	11.1	14.8	3.7	14.8	7.4	3.7			59.2
101-250			3.7	7.4	3.7	3.7	7.4	11.1				37.0
251-500				3.7								3.7
501-750												
TOTAL			7.4	22.2	18.5	7.4	22.2	18.5	3.7			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				27

INVERSION TYPE											
1			7.4	14.8	18.5	7.4	11.1	11.1	3.7		74.0
2				7.4			11.1	7.4			25.9
3											
4											
5											

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR OCTOBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	12	0
101- 250	3	0
251- 500	1	1
501- 750	1	1
751-1000	0	1
1001-1500	0	7
>1500	1	4
TOTAL	18	14
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	6.6	7.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.99	-01.69

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.6					1	7.6	3.1
NNE		7.6					1	7.6	4.5
NE	7.6						1	7.6	1.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	15.3						2	15.3	.8
SSW	7.6	7.6	7.6	7.6			4	30.4	5.8
SW		7.6					1	7.6	4.5
WSW							0	0.0	
W	7.6						1	7.6	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							2	15.0	
COL. TOTALS	38.1	30.4	7.6	7.6			13		3.0

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	20.0						2	20.0	1.3
SE							0	0.0	
SSE							0	0.0	
S		10.0					1	10.0	3.5
SSW	10.0	10.0					2	20.0	2.4
SW							0	0.0	
WSW	10.0						1	10.0	.4
W			10.0				1	10.0	6.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							2	20.0	
COL. TOTALS	50.0	20.0	10.0				10		1.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			7.6				1	7.6	8.1
NNE			7.6				1	7.6	7.8
NE	7.6						1	7.6	1.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	7.6	7.6					2	15.2	2.4
S	7.6						1	7.6	.6
SSW				7.6			1	7.6	14.4
SW		7.6	7.6	15.3			4	30.5	9.0
WSW							0	0.0	
W							0	0.0	
WNW	7.6						1	7.6	1.3
NW							0	0.0	
NNW	7.6						1	7.6	.8
CALM							0	0.0	
COL. TOTALS	38.0	15.2	22.8	22.9			13		6.8

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	.6
NE							0	0.0	
ENE	10.0						1	10.0	.6
E	10.0						1	10.0	2.1
ESE							0	0.0	
SE		10.0					1	10.0	4.6
SSE	10.0						1	10.0	.7
S	10.0	10.0					2	20.0	3.4
SSW							0	0.0	
SW		10.0					1	10.0	5.9
WSW	10.0						1	10.0	1.6
W			10.0				1	10.0	6.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0	30.0	10.0				10		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				7.6			1	7.6	11.9
NNE	7.6		7.6				2	15.2	4.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	7.6						1	7.6	1.0
SSE	7.6						1	7.6	2.8
S							0	0.0	
SSW	7.6	7.6	7.6	7.6			4	30.4	5.9
SW	7.6			7.6			2	15.2	7.1
WSW	7.6						1	7.6	.2
W	7.6						1	7.6	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	53.2	7.6	15.2	22.8			13		4.8

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		10.0					1	10.0	3.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	.9
SE							0	0.0	
SSE		20.0					2	20.0	7.2
S	10.0						1	10.0	1.2
SSW		10.0					1	10.0	5.5
SW	10.0						1	10.0	2.3
WSW							0	0.0	
W	10.0		10.0				2	20.0	3.1
WNW							0	0.0	
NW							0	0.0	
NNW	10.0						1	10.0	2.6
CALM							0	0.0	
COL. TOTALS	50.0	40.0	10.0				10		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				15.3			2	15.3	12.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	7.6						1	7.6	2.2
S	7.6	7.6					2	15.2	2.6
SSW	7.6						1	7.6	2.5
SW	7.6	23.0	7.6				5	38.2	4.3
WSW			7.6				1	7.6	8.4
W	7.6						1	7.6	1.3
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	38.0	30.6	15.2	15.3			13		5.1

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.7
NNE							0	0.0	
NE							0	0.0	
ENE	10.0						1	10.0	1.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	10.0	10.0	10.0				3	30.0	5.0
SW							0	0.0	
WSW	10.0	10.0					2	20.0	2.9
W			20.0				2	20.0	9.2
WNW		10.0					1	10.0	4.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	30.0	30.0				10		4.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.6		7.6			2	15.2	8.9
NNE			7.6				1	7.6	9.5
NE							0	0.0	
ENE	7.6						1	7.6	1.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		7.6					1	7.6	5.4
S							0	0.0	
SSW							0	0.0	
SW	7.6	7.6	23.0				5	38.2	5.6
WSW	7.6						1	7.6	.5
W		7.6					1	7.6	4.5
WNW							0	0.0	
NW							0	0.0	
NNW		7.6					1	7.6	4.2
CALM							0	0.0	
COL. TOTALS	22.8	38.0	30.6	7.6			13		5.5

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	2.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	20.0						2	20.0	2.6
SSW		10.0					1	10.0	5.4
SW		10.0					1	10.0	4.3
WSW							0	0.0	
W		10.0	30.0				4	40.0	6.7
WNW		10.0					1	10.0	5.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	40.0	30.0				10		5.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	6.5
NNE							0	0.0	
NE			8.3				1	8.3	6.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		16.6					2	16.6	3.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		25.0	8.3	8.3			5	41.6	7.5
WNW		8.3		8.3			2	16.6	8.3
NW							0	0.0	
NNW	8.3						1	8.3	2.7
CALM							0	0.0	
COL. TOTALS	8.3	49.9	24.9	16.6			12		6.5

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		10.0					1	10.0	5.8
S							0	0.0	
SSW		10.0					1	10.0	4.9
SW							0	0.0	
WSW				10.0			1	10.0	12.6
W		10.0		20.0	10.0		4	40.0	10.8
WNW		10.0	10.0				2	20.0	6.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	40.0	10.0	30.0	10.0		10		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.8
NNE							0	0.0	
NE				10.0			1	10.0	17.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		10.0	10.0				2	20.0	5.5
SW							0	0.0	
WSW							0	0.0	
W			20.0				2	20.0	8.3
WNW			20.0	20.0			4	40.0	10.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	10.0	50.0	30.0			10		8.1

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	14.2						1	14.2	1.6
SE		14.2					1	14.2	3.6
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				14.2	28.5		3	42.7	13.1
WNW			14.2	14.2			2	28.4	11.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	14.2	14.2	28.4	28.5		7		11.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	4.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		11.1					1	11.1	3.5
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	2.0
W					33.3		3	33.3	18.3
WNW			11.1				1	11.1	6.3
NW				11.1	11.1		2	22.2	15.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	22.2	11.1	11.1	44.4		9		11.3

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			20.0				1	20.0	9.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			20.0				1	20.0	7.7
WNW							0	0.0	
NW		20.0	20.0	20.0			3	60.0	8.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	60.0	20.0			5		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		16.6					1	16.6	3.3
SW							0	0.0	
WSW							0	0.0	
W		16.6				16.6	2	33.2	15.9
WNW			16.6				1	16.6	6.8
NW						16.6	1	16.6	28.5
NNW			16.6				1	16.6	8.0
CALM							0	0.0	
COL. TOTALS		33.2	33.2			33.2	6		13.0

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			20.0	20.0			2	40.0	10.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			20.0				1	20.0	6.5
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					20.0		1	20.0	22.8
WNW							0	0.0	
NW							0	0.0	
NNW		20.0					1	20.0	5.1
CALM							0	0.0	
COL. TOTALS		20.0	40.0	20.0	20.0		5		11.0

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF NOVEMBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	10.2	2.5	10.2	5.1	7.6		12.8	7.6				56.0
101-250	7.6		2.5				5.1	2.5				17.7
251-500				2.5	5.1			7.6				15.2
501-750	2.5	2.5			2.5							7.5
TOTAL	20.3	5.0	12.7	7.6	15.2		17.9	17.7				
NO INVERSION												2.0
								TOTAL NO. OF OCCURENCES				38
INVERSION TYPE												
1	2.6	2.6	2.6	2.6	7.8		5.2	10.5				33.9
2	7.8		7.8	2.6	5.2		10.5	7.8				41.7
3	5.2	2.6	2.6	2.6			2.6					15.6
4	5.2				2.6							7.8
5												

MONTH OF NOVEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	7.6		3.8	7.6			26.9	3.8				49.7
101-250		3.8	3.8	3.8	7.6		3.8	15.3				38.1
251-500			3.8				3.8					7.6
501-750												
TOTAL	7.6	3.8	11.4	11.4	7.6		34.5	19.1				
NO INVERSION												3.0
								TOTAL NO. OF OCCURENCES				25
INVERSION TYPE												
1				8.0			16.0	12.0				36.0
2		4.0	4.0				20.0	8.0				36.0
3	8.0		8.0	4.0	8.0							28.0
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR NOVEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	3	0
101- 250	4	0
251- 500	0	3
501- 750	1	1
751-1000	1	0
1001-1500	4	1
>1500	0	1
TOTAL	13	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	5.0	4.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-02.72	-02.64

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.8						1	5.8	1.8
NNE							0	0.0	
NE	11.7						2	11.7	.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	5.8						1	5.8	.4
S							0	0.0	
SSW	5.8	11.7	5.8	5.8			5	29.1	6.5
SW	5.8			5.8			2	11.6	6.0
WSW							0	0.0	
W	5.8	11.7		5.8			4	23.3	5.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							2	11.0	
COL. TOTALS	40.7	23.4	5.8	17.4			17		4.1

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	15.3						2	15.3	1.8
NNE	7.6						1	7.6	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			7.6				1	7.6	6.7
SW			7.6				1	7.6	8.9
WSW							0	0.0	
W		23.0	7.6				4	30.6	5.1
WNW		7.6	7.6				2	15.2	5.1
NW							0	0.0	
NNW	7.6						1	7.6	1.3
CALM							1	7.0	
COL. TOTALS	30.5	30.6	30.4				13		4.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.8						1	5.8	2.7
NE	11.7						2	11.7	1.6
ENE							0	0.0	
E	5.8						1	5.8	2.2
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		5.8		11.7			3	17.5	10.6
SW	5.8		5.8	5.8			3	17.4	7.3
WSW		5.8					1	5.8	3.6
W				11.7			2	11.7	13.1
WNW			5.8	5.8			2	11.6	11.1
NW	5.8						1	5.8	2.2
NNW			5.8				1	5.8	6.5
CALM							0	0.0	
COL. TOTALS	34.9	11.6	17.4	35.0			17		7.2

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			23.0				3	23.0	7.2
NE							0	0.0	
ENE							0	0.0	
E	7.6						1	7.6	.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	7.6		7.6				2	15.2	5.3
SW			7.6				1	7.6	8.3
WSW							0	0.0	
W			15.3	7.6			3	22.9	8.7
WNW		15.3	7.6				3	22.9	5.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	15.2	15.3	61.1	7.6			13		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - MIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		5.8	5.8				2	11.6	6.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	5.8						1	5.8	1.6
SSW		5.8					1	5.8	4.4
SW		17.6		11.7			5	29.3	8.3
WSW	5.8	5.8					2	11.6	2.9
W	5.8			17.6			4	23.4	11.1
WNW	5.8		5.8				2	11.6	4.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.2	35.0	11.6	29.3			17		7.0

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			15.3				2	15.3	7.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	7.6						1	7.6	2.7
S							0	0.0	
SSW		7.6					1	7.6	3.9
SW			15.3				2	15.3	7.5
WSW							0	0.0	
W		7.6	15.3		7.6		4	30.5	10.4
WNW		7.6	7.6				2	15.2	7.5
NW		7.6					1	7.6	4.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.6	30.4	53.5		7.6		13		7.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - MIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N				5.8			1	5.8	11.4
NNE			5.8				1	5.8	7.0
NE							0	0.0	
ENE	5.8						1	5.8	.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		5.8					1	5.8	5.3
SSW		11.7					2	11.7	4.4
SW	5.8	5.8		5.8			3	17.4	6.1
WSW	5.8		5.8		5.8		3	17.4	8.7
W		5.8			11.7		3	17.5	16.7
WNW	5.8		5.8				2	11.6	6.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.2	29.1	17.4	11.6	17.5		17		8.2

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			7.6				1	7.6	6.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		7.6				7.6	2	15.2	19.8
SW	7.6						1	7.6	2.8
WSW		15.3		7.6			3	22.9	7.2
W			23.0				3	23.0	8.7
WNW			15.3				2	15.3	8.0
NW			7.6				1	7.6	6.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.6	22.9	53.5	7.6		7.6	13		9.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		6.2					1	6.2	3.6
NNE			6.2	6.2			2	12.4	10.4
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	6.2	6.2					2	12.4	3.1
SSW							0	0.0	
SW		12.5			6.2		3	18.7	8.3
WSW		6.2					1	6.2	5.9
W	6.2		6.2		6.2	6.2	4	24.8	21.5
WNW	6.2	6.2	6.2				3	18.6	4.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.6	37.3	18.6	6.2	12.4	6.2	16		10.0

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	7.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		8.3					1	8.3	4.1
W			33.3	16.6			6	49.9	9.8
WNW	8.3		16.6				3	24.9	6.1
NW			8.3				1	8.3	7.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	8.3	66.5	16.6			12		8.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		6.2					1	6.2	5.8
NNE			6.2				1	6.2	8.1
NE							0	0.0	
ENE	6.2						1	6.2	2.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	6.2						1	6.2	2.8
WSW		6.2	6.2				2	12.4	6.2
W				6.2	12.5		3	18.7	17.5
WNW	6.2	6.2	12.5	6.2			5	31.1	7.8
NW	12.5						2	12.5	2.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	31.1	18.6	24.9	12.4	12.5		16		7.9

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	3.4
W		9.0	27.2	36.3			8	72.5	10.4
WNW			9.0	9.0			2	18.0	11.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		18.0	36.2	45.3			11		10.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.1					1	7.1	5.7
NNE							0	0.0	
NE			7.1				1	7.1	8.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		7.1					1	7.1	3.0
SSW							0	0.0	
SW							0	0.0	
WSW			7.1				1	7.1	8.4
W			7.1	7.1	21.4	14.2	7	49.8	30.3
WNW			7.1	7.1			2	14.2	9.9
NW		7.1					1	7.1	3.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		21.3	28.4	14.2	21.4	14.2	14		18.7

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			11.1	44.4		11.1	6	66.6	17.0
WNW			33.3				3	33.3	6.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			44.4	44.4		11.1	9		13.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			10.0				1	10.0	6.3
NNE							0	0.0	
NE				10.0			1	10.0	13.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				30.0	10.0	20.0	6	60.0	22.6
WNW				10.0			1	10.0	14.7
NW			10.0				1	10.0	8.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			20.0	50.0	10.0	20.0	10		17.8

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				14.2	14.2		2	28.4	17.4
WNW			14.2	28.5			3	42.7	13.4
NW			14.2				1	14.2	6.7
NNW		14.2					1	14.2	3.0
CALM							0	0.0	
COL. TOTALS		14.2	28.4	42.7	14.2		7		10.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				16.6			1	16.6	12.7
NE				16.6			1	16.6	14.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					33.3	33.3	4	66.6	25.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				33.2	33.3	33.3	6		21.3

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	33.3						1	33.3	2.6
WNW					33.3		1	33.3	21.2
NW		33.3					1	33.3	4.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3			33.3		3		9.6

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF DECEMBER 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	16.6	2.0	4.1	8.3	2.0	8.3	6.2	2.0				49.5
101-250	8.3		2.0	10.4	2.0	4.1	6.2	2.0		2.0		37.0
251-500	2.0				4.1	2.0	4.1					12.2
501-750												
TOTAL	26.9	2.0	6.1	18.7	8.1	14.4	16.5	4.0		2.0		
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				48
INVERSION TYPE												
1	2.0	2.0	4.1	8.3	4.1	6.2	14.5	2.0				43.2
2	8.3		2.0	10.4		6.2	2.0			2.0		30.9
3	12.5				4.1	2.0		2.0				20.6
4	2.0											2.0
5	2.0											2.0

MONTH OF DECEMBER 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	12.0		4.0	16.0	8.0	4.0	4.0	8.0	4.0			60.0
101-250		4.0	12.0	4.0			8.0					28.0
251-500								4.0		4.0		8.0
501-750												
TOTAL	12.0	4.0	16.0	20.0	8.0	4.0	12.0	12.0	4.0	4.0		
NO INVERSION												4.0
								TOTAL NO. OF OCCURENCES				24
INVERSION TYPE												
1			8.3	16.6	8.3		12.5	4.1		4.1		53.9
2	12.5		4.1	4.1		4.1		8.3	4.1			37.2
3		4.1	4.1									8.2
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CC - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR DECEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	5	1
251- 500	4	7
501- 750	1	0
751-1000	2	0
1001-1500	2	1
>1500	0	3
TOTAL	18	12
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	8.7	7.3
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.65	-01.17

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	17.6						3	17.6	.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	5.8						1	5.8	.9
SE							0	0.0	
SSE							0	0.0	
S	5.8						1	5.8	.9
SSW							0	0.0	
SW	5.8	5.8					2	11.6	2.2
WSW	5.8						1	5.8	1.3
W	17.6						3	17.6	1.9
WNW							0	0.0	
NW							0	0.0	
NNW	5.8						1	5.8	.9
CALM							5	29.0	
COL. TOTALS	64.2	5.8					17		.9

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.8						1	5.8	.4
NNE	5.8						1	5.8	1.8
NE							0	0.0	
ENE	17.6						3	17.6	.5
E	11.7						2	11.7	.6
ESE	5.8						1	5.8	.4
SE	5.8						1	5.8	.2
SSE	5.8	5.8					2	11.6	2.3
S							0	0.0	
SSW	5.8		5.8				2	11.6	5.3
SW	5.8						1	5.8	.2
WSW							0	0.0	
W	5.8						1	5.8	.4
WNW	5.8						1	5.8	.4
NW	5.8						1	5.8	.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	87.3	5.8	5.8				17		1.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.8						1	5.8	.5
NNE	5.8						1	5.8	2.6
NE	5.8						1	5.8	2.7
ENE							0	0.0	
E							0	C.C	
ESE							0	0.0	
SE	5.8						1	5.8	1.0
SSE							0	0.0	
S	5.8						1	5.8	.9
SSW		5.8					1	5.8	3.6
SW	11.7	5.8					3	17.5	2.2
WSW	5.8	11.7					3	17.5	3.7
W	5.8						1	5.8	2.8
WNW	5.8						1	5.8	1.1
NW	5.8						1	5.8	.7
NNW	11.7						2	11.7	1.0
CALM							0	0.0	
COL. TOTALS	75.6	23.3					17		2.1

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	C.C	
NNE	11.7						2	11.7	1.9
NE							0	0.0	
ENE	5.8						1	5.8	.9
E							0	0.0	
ESE	11.7						2	11.7	1.4
SE	11.7						2	11.7	.5
SSE							0	0.0	
S	5.8		5.8				2	11.6	3.8
SSW					5.8		1	5.8	17.0
SW		5.8					1	5.6	5.6
WSW	5.8						1	5.8	1.1
W							0	0.0	
WNW	5.8	5.8					2	11.6	2.2
NW							0	C.C	
NNW	17.6						3	17.6	1.6
CALM							C	0.0	
COL. TOTALS	75.9	11.6	5.8		5.8		17		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	23.5		5.8				5	29.3	2.4
NNE	5.8						1	5.8	2.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	5.8	11.7					3	17.5	3.5
S		11.7					2	11.7	3.0
SSW							0	0.0	
SW	5.8		5.8				2	11.6	5.1
WSW		5.8					1	5.8	5.0
W	5.8	5.8					2	11.6	3.6
WNW		5.8					1	5.8	5.3
NW							0	0.0	
NNW							0	C.C	
CALM							0	0.0	
COL. TOTALS	46.7	40.8	11.6				17		3.4

200 METER LEVEL WINDS AFTERNCON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		5.8					1	5.8	5.7
NNE		23.5					4	23.5	3.3
NE	11.7						2	11.7	1.2
ENE							0	0.0	
E							0	0.0	
ESE							0	C.C	
SE							0	0.0	
SSE							0	0.0	
S	17.6		5.8				4	23.4	3.0
SSW		5.8	5.8				2	11.6	6.4
SW		5.8					1	5.8	3.6
WSW							0	C.C	
W							0	0.0	
WNW			5.8				1	5.8	7.6
NW	5.8						1	5.8	.5
NNW	5.8						1	5.8	2.6
CALM							0	0.0	
COL. TOTALS	40.9	40.9	17.4				17		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.7						2	11.7	1.1
NNE			5.8				1	5.8	6.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.7	11.7				4	23.4	5.3
S	11.7		5.8				3	17.5	3.0
SSW	5.8			5.8			2	11.6	6.4
SW		5.8					1	5.8	4.6
WSW	5.8						1	5.8	1.0
W			5.8				1	5.8	6.4
WNW			5.8				1	5.8	6.6
NW							0	0.0	
NNW	5.8						1	5.8	2.0
CALM							0	0.0	
COL. TOTALS	40.8	17.5	34.9	5.8			17		4.2

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.7		11.7				4	23.4	4.2
NNE		17.6					3	17.6	4.6
NE		5.8					1	5.8	4.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	5.8		5.8				2	11.6	4.5
SSE							0	0.0	
S							0	0.0	
SSW		5.8					1	5.8	4.9
SW		5.8			5.8		2	11.6	10.1
WSW	5.8						1	5.8	2.8
W							0	0.0	
WNW			5.8				1	5.8	7.7
NW			5.8				1	5.8	8.3
NNW			5.8				1	5.8	6.3
CALM							0	0.0	
COL. TOTALS	23.3	35.0	34.9		5.8		17		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		5.8					1	5.8	3.1
NNE		5.8	5.8				2	11.6	5.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	5.8						1	5.8	2.1
SSW		5.8	17.6	5.8			5	29.2	8.7
SW							0	0.0	
WSW	5.8	5.8					2	11.6	3.0
W			5.8				1	5.8	8.1
WNW	5.8	5.8	11.7				4	23.3	5.2
NW	5.8						1	5.8	1.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.2	29.0	40.9	5.8			17		5.7

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			12.5				2	12.5	5.6
NNE		6.2					1	6.2	3.5
NE			6.2				1	6.2	6.3
ENE							0	0.0	
E		6.2					1	6.2	3.0
ESE							0	0.0	
SE							0	0.0	
SSE		6.2					1	6.2	4.6
S		12.5					2	12.5	5.3
SSW	6.2						1	6.2	2.4
SW	6.2						1	6.2	2.0
WSW							0	0.0	
W			18.7				3	18.7	7.2
WNW	6.2	6.2					2	12.4	2.2
NW							0	0.0	
NNW		6.2					1	6.2	3.6
CALM							0	0.0	
COL. TOTALS	18.6	43.5	37.4				16		5.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	6.6						1	6.6	1.9
NNE		6.6	6.6				2	13.2	5.6
NE		6.6					1	6.6	5.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	6.6						1	6.6	1.4
SSW							0	0.0	
SW				6.6			1	6.6	12.3
WSW			6.6				1	6.6	6.0
W	6.6	6.6	20.0				5	33.2	5.6
WNW			13.3		6.6		3	19.9	10.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	19.8	19.8	46.5	6.6	6.6		15		6.5

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		6.6					1	6.6	4.8
NNE							0	0.0	
NE		6.6					1	6.6	5.0
ENE	6.6	6.6					2	13.2	2.5
E							0	0.0	
ESE							0	0.0	
SE	6.6						1	6.6	2.0
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			6.6				1	6.6	6.9
WSW		6.6					1	6.6	4.9
W	6.6	13.3	13.3	6.6			6	39.8	6.8
WNW			6.6				1	6.6	7.3
NW							0	0.0	
NNW	6.6						1	6.6	1.4
CALM							0	0.0	
COL. TOTALS	26.4	39.7	26.5	6.6			15		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		7.6					1	7.6	3.0
NE		7.6					1	7.6	5.8
ENE	7.6						1	7.6	2.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		7.6					1	7.6	4.4
WSW							0	0.0	
W			15.3	15.3			4	30.6	10.4
WNW			15.3		7.6		3	22.9	10.8
NW			7.6				1	7.6	8.9
NNW	7.6						1	7.6	.8
CALM							0	0.0	
COL. TOTALS	15.2	22.8	38.2	15.3	7.6		13		7.6

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.1
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	2.0
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.5
S							0	0.0	
SSW		8.3					1	8.3	3.4
SW			8.3				1	8.3	6.7
WSW			8.3				1	8.3	6.4
W			8.3	8.3			2	16.6	9.0
WNW			16.6	8.3			3	24.9	9.4
NW							0	0.0	
NNW	8.3						1	8.3	1.9
CALM							0	0.0	
COL. TOTALS	33.2	8.3	41.5	16.6			12		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	4.7
NNE							0	0.0	
NE							0	0.0	
ENE	11.1	11.1					2	22.2	3.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1	11.1				2	22.2	5.7
W				11.1			1	11.1	12.3
WNW				11.1			1	11.1	10.1
NW				11.1			1	11.1	11.3
NNW				11.1			1	11.1	13.0
CALM							0	0.0	
COL. TOTALS	11.1	33.3	11.1	44.4			9		7.7

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	7.2
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	2.2
W			11.1	11.1			2	22.2	9.0
WNW			22.2				2	22.2	9.5
NW		11.1		11.1			2	22.2	8.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	44.4	22.2			9		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					33.3		1	33.3	16.6
W			33.3				1	33.3	12.8
WNW		33.3					1	33.3	8.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	33.3	33.3			3		12.5

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5	12.5					2	25.0	3.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		12.5					1	12.5	3.9
ESE							0	0.0	
SE			12.5				1	12.5	6.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			12.5				1	12.5	6.0
WNW		12.5		12.5			2	25.0	6.3
NW					12.5		1	12.5	21.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0	12.5	12.5		8		7.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	1.5	3.1	1.5	6.3	14.2	4.7	4.7	6.3				42.3
101-250	9.5		1.5	7.9	1.5	1.5	9.5	6.3				37.7
251-500	4.7	1.5	3.1	3.1			1.5	3.1				17.0
501-750		1.5										1.5
TOTAL	15.7	6.1	6.1	17.3	15.7	6.2	15.7	15.7				
NO INVERSION												0.0
											TOTAL NO. OF OCCURENCES	63

INVERSION TYPE												
1	1.5	1.5		6.3	7.9	1.5	11.1	7.9				37.7
2	3.1	1.5	1.5	6.3	4.7	3.1	3.1	7.9				31.2
3	9.5	3.1	4.7	3.1	3.1	1.5	1.5					26.5
4	1.5			1.5								3.0
5												

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	3.2		6.5	4.9	3.2	6.5	3.2	8.1				35.6
101-250		3.2	8.1	18.0	9.8	1.6	3.2	8.1				52.0
251-500			3.2			3.2	4.9					11.3
501-750												
TOTAL	3.2	3.2	17.8	22.9	13.0	11.3	11.3	16.2				
NO INVERSION												0.0
											TOTAL NO. OF OCCURENCES	61

INVERSION TYPE												
1			4.9	4.9	6.5	4.9		8.1				29.3
2	1.6		3.2	9.8	4.9	4.9	9.8	8.1				42.3
3	1.6		9.8	8.1	1.6	1.6	1.6					24.3
4		3.2										3.2
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	8	0
101- 250	5	3
251- 500	3	10
501- 750	0	3
751-1000	0	1
1001-1500	0	0
>1500	0	0
TOTAL	16	17
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.5	3.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.98	-01.56

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	4.7
NNE							0	0.0	
NE							0	0.0	
ENE	11.1	11.1					2	22.2	3.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1	11.1				2	22.2	5.7
W				11.1			1	11.1	12.3
WNW				11.1			1	11.1	10.1
NW				11.1			1	11.1	11.3
NNW				11.1			1	11.1	13.0
CALM							0	0.0	
COL. TOTALS	11.1	33.3	11.1	44.4			9		7.7

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	7.2
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	2.2
W			11.1	11.1			2	22.2	9.0
WNW			22.2				2	22.2	9.5
NW		11.1		11.1			2	22.2	8.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	44.4	22.2			9		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					33.3		1	33.3	16.6
W				33.3			1	33.3	12.8
WNW			33.3				1	33.3	8.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	33.3	33.3		3		12.5

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5	12.5					2	25.0	3.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		12.5					1	12.5	3.9
ESE							0	0.0	
SE			12.5				1	12.5	6.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			12.5				1	12.5	6.0
WNW		12.5		12.5			2	25.0	6.3
NW					12.5		1	12.5	21.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0	12.5	12.5		8		7.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	**********	INVERSION BASE HEIGHT (METERS)										
001-100	1.5	3.1	1.5	6.3	14.2	4.7	4.7	6.3				42.3
101-250	9.5		1.5	7.9	1.5	1.5	9.5	6.3				37.7
251-500	4.7	1.5	3.1	3.1			1.5	3.1				17.0
501-750		1.5										1.5
TOTAL	15.7	6.1	6.1	17.3	15.7	6.2	15.7	15.7				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				63

INVERSION TYPE												
1	1.5	1.5		6.3	7.9	1.5	11.1	7.9				37.7
2	3.1	1.5	1.5	6.3	4.7	3.1	3.1	7.9				31.2
3	9.5	3.1	4.7	3.1	3.1	1.5	1.5					26.5
4	1.5			1.5								3.0
5												

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	**********	INVERSION BASE HEIGHT (METERS)										
001-100	3.2		6.5	4.9	3.2	6.5	3.2	8.1				35.6
101-250		3.2	8.1	18.0	9.8	1.6	3.2	8.1				52.0
251-500			3.2			3.2	4.9					11.3
501-750												
TOTAL	3.2	3.2	17.8	22.9	13.0	11.3	11.3	16.2				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				61

INVERSION TYPE												
1			4.9	4.9	6.5	4.9		8.1				29.3
2	1.6		3.2	9.8	4.9	4.9	9.8	8.1				42.3
3	1.6		9.8	8.1	1.6	1.6	1.6					24.3
4		3.2										3.2
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	8	0
101- 250	5	3
251- 500	3	10
501- 750	0	3
751-1000	0	1
1001-1500	0	0
>1500	0	0
TOTAL	16	17
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.5	3.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.98	-01.56

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	4.7
NNE							0	0.0	
NE							0	0.0	
ENE	11.1	11.1					2	22.2	3.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1	11.1				2	22.2	5.7
W				11.1			1	11.1	12.3
WNW				11.1			1	11.1	10.1
NW				11.1			1	11.1	11.3
NNW				11.1			1	11.1	13.0
CALM							0	0.0	
COL. TOTALS	11.1	33.3	11.1	44.4			9		7.7

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	7.2
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	2.2
W			11.1	11.1			2	22.2	9.0
WNW			22.2				2	22.2	9.5
NW		11.1		11.1			2	22.2	8.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	44.4	22.2			9		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					33.3		1	33.3	16.6
W				33.3			1	33.3	12.8
WNW			33.3				1	33.3	8.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	33.3	33.3		3		12.5

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5	12.5					2	25.0	3.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		12.5					1	12.5	3.9
ESE							0	0.0	
SE			12.5				1	12.5	6.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			12.5				1	12.5	6.0
WNW		12.5		12.5			2	25.0	8.3
NW					12.5		1	12.5	21.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0	12.5	12.5		8		7.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	1.5	3.1	1.5	6.3	14.2	4.7	4.7	6.3				42.3
101-250	9.5		1.5	7.9	1.5	1.5	9.5	6.3				37.7
251-500	4.7	1.5	3.1	3.1			1.5	3.1				17.0
501-750		1.5										1.5
TOTAL	15.7	6.1	6.1	17.3	15.7	6.2	15.7	15.7				
NO INVERSION												C.C
											TOTAL NO. OF OCCURENCES	63

INVERSION TYPE											
1	1.5	1.5		6.3	7.9	1.5	11.1	7.9			37.7
2	3.1	1.5	1.5	6.3	4.7	3.1	3.1	7.9			31.2
3	9.5	3.1	4.7	3.1	3.1	1.5	1.5				26.5
4	1.5			1.5							3.0
5											

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	3.2		6.5	4.9	3.2	6.5	3.2	8.1				35.6
101-250		3.2	8.1	18.0	9.8	1.6	3.2	8.1				52.0
251-500			3.2			3.2	4.9					11.3
501-750												
TOTAL	3.2	3.2	17.8	22.9	13.0	11.3	11.3	16.2				
NO INVERSION												C.0
											TOTAL NO. OF OCCURENCES	61

INVERSION TYPE											
1			4.9	4.9	6.5	4.9		8.1			29.3
2	1.6		3.2	9.8	4.9	4.9	9.8	8.1			42.3
3	1.6		9.8	8.1	1.6	1.6	1.6				24.3
4		3.2									3.2
5											

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	8	0
101- 250	5	3
251- 500	3	10
501- 750	0	3
751-1000	0	1
1001-1500	0	0
>1500	0	0
TOTAL	16	17
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.5	3.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.98	-01.56

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						2	14.2	1.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	7.1	7.1					2	14.2	2.4
SSW			7.1				1	7.1	6.7
SW	14.2						2	14.2	.6
WSW	21.4						3	21.4	1.3
W	7.1						1	7.1	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							3	21.0	
COL. TOTALS	64.0	7.1	7.1				14		1.4

SURFACE WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	25.0						2	25.0	1.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	12.5						1	12.5	.9
SSE							0	0.0	
S							0	0.0	
SSW	12.5	25.0					3	37.5	3.9
SW							0	0.0	
WSW		12.5					1	12.5	4.5
W							0	0.0	
WNW	12.5						1	12.5	2.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	62.5	37.5					8		2.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	7.1						1	7.1	1.9
NE		7.1					1	7.1	4.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				14.2			2	14.2	10.6
SSW	14.2			7.1			3	21.3	5.5
SW	21.4	7.1					4	28.5	2.0
WSW	7.1						1	7.1	1.8
W							0	0.0	
WNW	14.2						2	14.2	.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	64.0	14.2		21.3			14		4.0

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		12.5					1	12.5	3.8
NE		12.5					1	12.5	3.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		12.5					1	12.5	5.0
SSE							0	0.0	
S							0	0.0	
SSW			37.5				3	37.5	7.8
SW							0	0.0	
WSW			12.5				1	12.5	8.0
W							0	0.0	
WNW		12.5					1	12.5	5.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	50.0				8		6.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		14.2					2	14.2	4.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				7.1			1	7.1	10.3
SSE	14.2						2	14.2	1.3
S	7.1	7.1					2	14.2	2.5
SSW	7.1			7.1			2	14.2	7.4
SW	7.1	14.2					3	21.3	4.1
WSW		7.1					1	7.1	4.7
W							0	0.0	
WNW	7.1						1	7.1	2.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	42.6	42.6		14.2			14		4.3

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		12.5					1	12.5	5.1
NE							0	0.0	
ENE							0	0.0	
E	12.5						1	12.5	1.7
ESE							0	0.0	
SE			12.5				1	12.5	6.0
SSE							0	0.0	
S							0	0.0	
SSW			25.0				2	25.0	8.4
SW			12.5				1	12.5	9.0
WSW				12.5			1	12.5	14.4
W							0	0.0	
WNW	12.5						1	12.5	2.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	12.5	50.0	12.5			8		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		7.1	7.1				2	14.2	6.1
NE							0	0.0	
ENE	7.1						1	7.1	.8
E							0	0.0	
ESE							0	0.0	
SE	7.1						1	7.1	.4
SSE	7.1						1	7.1	1.3
S	14.2	7.1					3	21.3	2.6
SSW				7.1			1	7.1	14.2
SW		7.1	7.1				2	14.2	6.3
WSW		7.1					1	7.1	5.1
W		7.1					1	7.1	4.4
WNW							0	0.0	
NW		7.1					1	7.1	3.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	35.5	42.6	14.2	7.1			14		4.4

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		12.5					1	12.5	3.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		12.5					1	12.5	3.5
SSE							0	0.0	
S			12.5				1	12.5	6.1
SSW			12.5				1	12.5	9.6
SW				12.5			1	12.5	12.2
WSW	12.5						1	12.5	2.5
W					12.5		1	12.5	17.0
WNW		12.5					1	12.5	4.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0	12.5	12.5		8		7.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		7.6					1	7.6	3.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			7.6				1	7.6	6.3
S			7.6				1	7.6	6.5
SSW		23.0			7.6		4	30.6	9.4
SW		7.6					1	7.6	3.6
WSW							0	0.0	
W		7.6	7.6				2	15.2	6.6
WNW	7.6	15.3					3	22.9	3.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.6	61.1	22.8		7.6		13		6.3

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			12.5				1	12.5	6.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0					2	25.0	3.6
SW		12.5		25.0			3	37.5	9.0
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	12.5						1	12.5	2.8
NNW	12.5						1	12.5	2.2
CALM							0	0.0	
COL. TOTALS	25.0	37.5	12.5	25.0			8		5.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		7.6					1	7.6	3.1
S				7.6			1	7.6	13.2
SSW			15.3				2	15.3	9.4
SW					7.6		1	7.6	17.7
WSW	7.6						1	7.6	2.9
W	7.6	23.0	7.6	7.6			6	45.8	6.4
WNW				7.6			1	7.6	10.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	15.2	30.6	22.9	22.8	7.6		13		8.0

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	14.2						1	14.2	.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		14.2	14.2	14.2			3	42.6	8.7
WSW		14.2					1	14.2	5.1
W	14.2	14.2					2	28.4	3.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	42.6	14.2	14.2			7		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			9.0	18.1			3	27.1	11.7
SW						9.0	1	9.0	33.8
WSW	9.0	9.0					2	18.0	2.8
W	9.0		9.0	9.0			3	27.0	6.9
WNW	9.0						1	9.0	2.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.0	9.0	18.0	27.1		9.0	11		8.9

1000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		14.2					1	14.2	5.6
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				14.2			1	14.2	11.8
WSW		14.2	14.2				2	28.4	5.8
W		14.2					1	14.2	3.6
WNW		14.2	14.2				2	28.4	6.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		56.8	28.4	14.2			7		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		12.5	25.0				3	37.5	6.7
WSW		12.5	12.5				2	25.0	6.0
W		12.5	12.5		12.5		3	37.5	10.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		37.5	50.0		12.5		8		7.9

1500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		14.2	14.2				2	28.4	7.1
W		14.2	14.2				2	28.4	5.7
WNW	14.2		28.5				3	42.7	6.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	28.4	56.9				7		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		16.6					1	16.6	5.5
WSW			16.6	16.6			2	33.2	10.5
W			16.6	33.3			3	49.9	12.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	33.2	49.9			6		10.6

2000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			40.0				2	40.0	6.6
W			40.0	20.0			3	60.0	8.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			80.0	20.0			5		7.5

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF FEBRUARY 1979 MORNING

THICKNESS (METERS)	SFC	********** INVERSION BASE HEIGHT (METERS) ********** 001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	11.4	2.8	2.8	8.5	2.8	5.7	8.5	5.7				48.2
101-250	11.4		8.5	2.8	5.7		5.7					34.1
251-500	2.8			8.5			2.8					14.1
501-750												
TOTAL	25.6	2.8	11.3	19.8	8.5	5.7	17.0	5.7				
NO INVERSION												2.8
								TOTAL NO. OF OCCURENCES				34
INVERSION TYPE												
1		2.9	5.8	2.9			14.7	2.9				29.2
2	2.9		5.8	11.7	5.8	5.8	2.9					34.9
3	11.7			5.8	2.9			2.9				23.3
4	11.7											11.7
5												

MONTH OF FEBRUARY 1979 AFTERNOON

THICKNESS (METERS)	SFC	********** INVERSION BASE HEIGHT (METERS) ********** 001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			5.5	11.1	5.5		16.6					38.7
101-250	5.5		5.5	11.1	11.1		5.5	5.5				44.2
251-500												
501-750												
TOTAL	5.5		11.0	22.2	16.6		22.1	5.5				
NO INVERSION												16.0
								TOTAL NO. OF OCCURENCES				15
INVERSION TYPE												
1	6.6		6.6	13.3	6.6		13.3					46.4
2			6.6	13.3	6.6		13.3	6.6				46.4
3					6.6							6.6
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR FEBRUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	4	2
251- 500	4	1
501- 750	1	3
751-1000	0	0
1001-1500	0	0
>1500	0	2
TOTAL	13	8
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.3	6.4
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.64	-00.99

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	6.2						1	6.2	.2
SE							0	0.0	
SSE							0	0.0	
S	12.5						2	12.5	1.8
SSW	6.2	6.2					2	12.4	3.1
SW	6.2	6.2					2	12.4	2.9
WSW	6.2						1	6.2	1.3
W	6.2	12.5					3	18.7	3.9
WNW		6.2					1	6.2	4.5
NW	6.2						1	6.2	.2
NNW	6.2						1	6.2	.4
CALM							2	12.0	
COL. TOTALS	55.9	31.1					16		2.1

SURFACE WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1	5.5					3	16.6	2.0
NNE	11.1						2	11.1	1.5
NE	5.5						1	5.5	.9
ENE							0	0.0	
E							0	0.0	
ESE	5.5						1	5.5	.9
SE	11.1						2	11.1	1.7
SSE	11.1						2	11.1	1.0
S							0	0.0	
SSW		5.5					1	5.5	3.6
SW		5.5					1	5.5	3.6
WSW							0	0.0	
W		11.1	5.5				3	16.6	5.2
WNW							0	0.0	
NW	5.5						1	5.5	.9
NNW	5.5						1	5.5	1.3
CALM							0	0.0	
COL. TOTALS	66.4	27.6	5.5				18		2.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	12.5						2	12.5	1.6
NE							0	0.0	
ENE	6.2						1	6.2	1.4
E	6.2						1	6.2	1.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		6.2	6.2				2	12.4	5.9
SSW	6.2	18.7					4	24.9	4.6
SW		6.2					1	6.2	5.5
WSW	6.2	6.2					2	12.4	3.2
W				6.2			1	6.2	12.3
WNW				12.5			2	12.5	14.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	37.3	37.3	6.2	18.7			16		5.6

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1		5.5				3	16.6	3.7
NNE	5.5	11.1					3	16.6	3.6
NE		5.5					1	5.5	4.7
ENE							0	0.0	
E		5.5					1	5.5	4.3
ESE							0	0.0	
SE			5.5				1	5.5	6.8
SSE	5.5	5.5					2	11.0	3.6
S			5.5				1	5.5	9.7
SSW		5.5					1	5.5	4.3
SW							0	0.0	
WSW				11.1			2	11.1	11.9
W				5.5			1	5.5	15.4
WNW	5.5						1	5.5	2.4
NW	5.5						1	5.5	2.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.1	33.1	16.5	16.6			18		5.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		12.5					2	12.5	3.4
NE							0	0.0	
ENE							0	0.0	
E	6.2						1	6.2	1.0
ESE							0	0.0	
SE	6.2						1	6.2	.5
SSE			6.2				1	6.2	6.4
S		12.5					2	12.5	4.1
SSW		6.2	6.2				2	12.4	5.7
SW	6.2	6.2					2	12.4	3.5
WSW	6.2						1	6.2	2.2
W		6.2		6.2			2	12.4	6.8
WNW			6.2	6.2			2	12.4	12.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.8	43.6	18.6	12.4			16		5.1

200 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.5	11.1	5.5				4	22.1	4.6
NE			5.5				1	5.5	6.0
ENE							0	0.0	
E							0	0.0	
ESE		5.5	5.5				2	11.0	4.8
SE				5.5			1	5.5	11.4
SSE			5.5				1	5.5	6.5
S	5.5						1	5.5	.6
SSW		5.5					1	5.5	4.3
SW	5.5	5.5					2	11.0	2.1
WSW							0	0.0	
W			11.1	5.5			3	16.6	10.1
WNW	5.5						1	5.5	.5
NW	5.5						1	5.5	.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.5	27.6	33.1	11.0			18		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		6.2					1	6.2	5.6
NNE		6.2					1	6.2	5.7
NE	6.2						1	6.2	2.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			6.2				1	6.2	6.6
SSW	6.2		6.2				2	12.4	4.0
SW	6.2	6.2	6.2				3	18.6	4.3
WSW							0	0.0	
W		6.2		6.2			2	12.4	6.7
WNW	6.2	6.2	6.2	6.2			4	24.8	6.5
NW		6.2					1	6.2	3.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.8	37.2	24.8	12.4			16		5.2

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.7	5.8					3	17.5	1.9
NE		11.7					2	11.7	3.7
ENE							0	0.0	
E							0	0.0	
ESE		5.8					1	5.8	5.5
SE				5.8			1	5.8	12.2
SSE		5.8	5.8				2	11.6	6.3
S							0	0.0	
SSW			5.8				1	5.8	6.3
SW	11.7						2	11.7	1.9
WSW		5.8	5.8				2	11.6	6.3
W			5.8	5.8			2	11.6	9.4
WNW		5.8					1	5.8	4.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	23.4	40.7	23.2	11.6			17		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			6.2				1	6.2	6.2
NE	6.2		6.2				2	12.4	3.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0	6.2				5	31.2	5.2
SW				6.2			1	6.2	13.4
WSW							0	0.0	
W		12.5	6.2				3	18.7	5.2
WNW			12.5				2	12.5	8.5
NW	6.2	6.2					2	12.4	4.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.4	43.7	37.3	6.2			16		5.8

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.8		5.8				2	11.6	4.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	5.8						1	5.8	2.8
SE	5.8						1	5.8	.7
SSE	5.8						1	5.8	2.4
S	11.7						2	11.7	2.0
SSW		5.8					1	5.8	3.3
SW	5.8	5.8					2	11.6	2.8
WSW	5.8						1	5.8	2.8
W			5.8	11.7	5.8		4	23.3	13.6
WNW	5.8	5.8					2	11.6	2.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	52.3	17.4	11.6	11.7	5.8		17		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		6.2					1	6.2	4.7
NNE							0	0.0	
NE		6.2					1	6.2	4.8
ENE							0	0.0	
E	6.2						1	6.2	2.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	6.2						1	6.2	1.0
SSW			6.2	6.2			2	12.4	10.3
SW							0	0.0	
WSW			6.2				1	6.2	7.0
W	6.2	12.5					3	18.7	3.5
WNW		12.5	6.2	6.2			4	24.9	7.3
NW		6.2					1	6.2	3.3
NNW		6.2					1	6.2	5.5
CALM							0	0.0	
COL. TOTALS	18.6	49.8	18.6	12.4			16		5.5

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	5.8						1	5.8	2.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		5.8					1	5.8	3.2
S	5.8						1	5.8	2.6
SSW		11.7	5.8				3	17.5	4.7
SW			5.8				1	5.8	6.1
WSW	5.8		5.8				2	11.6	5.1
W		11.7		11.7	5.8		5	29.2	11.2
WNW	5.8		5.8				2	11.6	5.0
NW							0	0.0	
NNW	5.8						1	5.8	1.7
CALM							0	0.0	
COL. TOTALS	29.0	29.2	23.2	11.7	5.8		17		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		6.6					1	6.6	3.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	6.6						1	6.6	2.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		6.6		13.3			3	19.9	9.4
SW							0	0.0	
WSW		13.3					2	13.3	3.6
W	6.6	6.6					2	13.2	4.1
WNW	6.6	6.6		6.6			3	19.8	6.1
NW			6.6	6.6			2	13.2	9.2
NNW			6.6				1	6.6	8.4
CALM							0	0.0	
COL. TOTALS	19.8	39.7	13.2	26.5			15		6.3

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		5.8					1	5.8	3.3
E							0	0.0	
ESE			5.8				1	5.8	9.7
SE							0	0.0	
SSE		5.8					1	5.8	3.9
S							0	0.0	
SSW		11.7	11.7				4	23.4	5.7
SW			5.8				1	5.8	9.2
WSW		5.8					1	5.8	4.2
W		5.8	11.7		11.7		5	29.2	13.7
WNW			5.8				1	5.8	6.1
NW				5.8			1	5.8	12.0
NNW	5.8						1	5.8	1.6
CALM							0	0.0	
COL. TOTALS	5.8	34.9	40.8	5.8	11.7		17		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			7.1				1	7.1	7.9
NNE		7.1					1	7.1	5.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			7.1		14.2		3	21.3	14.4
WSW				7.1			1	7.1	14.3
W		7.1	7.1				2	14.2	6.9
WNW	7.1	7.1		7.1			3	21.3	5.5
NW			7.1			7.1	2	14.2	22.0
NNW			7.1				1	7.1	9.5
CALM							0	0.0	
COL. TOTALS	7.1	21.3	35.5	14.2	14.2	7.1	14		11.0

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		7.1					1	7.1	3.0
SSW							0	0.0	
SW		7.1	14.2				3	21.3	6.5
WSW		7.1					1	7.1	3.1
W			14.2	7.1			3	21.3	9.0
WNW			14.2				2	14.2	6.4
NW	7.1	7.1		7.1	7.1		4	28.4	8.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.1	28.4	42.6	14.2	7.1		14		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		10.0	10.0		10.0		3	30.0	11.3
WSW		10.0			10.0		2	20.0	11.6
W		10.0					1	10.0	4.3
WNW			10.0				1	10.0	8.2
NW						10.0	1	10.0	30.3
NNW				20.0			2	20.0	13.3
CALM							0	0.0	
COL. TOTALS		30.0	20.0	20.0	20.0	10.0	10		12.6

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			12.5				1	12.5	8.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		12.5					1	12.5	3.2
SSE							0	0.0	
S							0	0.0	
SSW				12.5			1	12.5	13.0
SW							0	0.0	
WSW	12.5		12.5				2	25.0	4.0
W							0	0.0	
WNW				12.5			1	12.5	12.6
NW					12.5		1	12.5	20.2
NNW				12.5			1	12.5	11.5
CALM							0	0.0	
COL. TOTALS	12.5	12.5	25.0	37.5	12.5		8		9.6

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF MARCH 1979 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	2.9	2.9	5.8	2.9		2.9	14.7	5.8				37.9
101-250	20.5			5.8	2.9		5.8	5.8				40.8
251-500	2.9		5.8				2.9					11.6
501-750												
TOTAL	26.3	2.9	11.6	8.7	2.9	2.9	23.4	11.6				
NO INVERSION												8.0
											TOTAL NO. OF OCCURENCES	31
INVERSION TYPE												
1			3.2	6.4	3.2	3.2	16.1	3.2				35.3
2	6.4	3.2	3.2	3.2			6.4	6.4				28.8
3	19.3		6.4				3.2	3.2				32.1
4	3.2											3.2
5												

MONTH OF MARCH 1979 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	9.5	4.7	4.7		4.7	4.7	9.5	14.2				52.0
101-250	4.7						4.7	9.5				18.9
251-500				4.7								4.7
501-750												
TOTAL	14.2	4.7	4.7	4.7	4.7	4.7	14.2	23.7				
NO INVERSION												23.0
											TOTAL NO. OF OCCURENCES	16
INVERSION TYPE												
1	12.5				6.2	6.2	6.2	25.0				56.1
2	6.2						6.2	6.2				18.6
3			6.2	6.2			6.2					18.6
4		6.2										6.2
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MARCH 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	4	1
251- 500	1	3
501- 750	1	2
751-1000	2	0
1001-1500	2	2
>1500	1	6
TOTAL	16	14
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.7	6.9
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.65	-01.21

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

SURFACE WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.3
NE	8.3						1	8.3	1.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.8
S	8.3						1	8.3	.9
SSW		8.3					1	8.3	4.5
SW	8.3	8.3					2	16.6	2.9
WSW	16.6						2	16.6	2.0
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	.2
NNW							0	0.0	
CALM							2	16.0	
COL. TOTALS	66.4	16.6					12		1.6

SURFACE WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		7.1					1	7.1	3.6
NNE	14.2						2	14.2	.6
NE	21.4						3	21.4	1.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		7.1					1	7.1	4.5
SSE							0	0.0	
S	7.1						1	7.1	2.2
SSW		7.1					1	7.1	4.5
SW							0	0.0	
WSW		7.1					1	7.1	3.6
W		7.1					1	7.1	3.6
WNW		14.2					2	14.2	4.0
NW	7.1						1	7.1	1.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	49.7					14		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

100 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.4
NNE		8.3					1	8.3	4.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		16.6					2	16.6	4.9
SSW	8.3			8.3			2	16.6	8.2
SW				8.3			1	8.3	11.4
WSW	8.3	8.3					2	16.6	3.0
W							0	0.0	
WNW	16.6						2	16.6	.6
NW							0	0.0	
NNW		8.3					1	8.3	3.1
CALM							0	0.0	
COL. TOTALS	33.2	49.8		16.6			12		4.6

100 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	7.1		7.1				2	14.2	3.7
NNE		7.1					1	7.1	3.3
NE			14.2				2	14.2	7.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		7.1					1	7.1	4.7
SSE							0	0.0	
S		7.1					1	7.1	14.1
SSW			7.1				1	7.1	9.2
SW							0	0.0	
WSW				7.1			1	7.1	14.9
W				7.1			1	7.1	11.1
WNW				7.1			1	7.1	10.4
NW			7.1	7.1			2	14.2	11.8
NNW	7.1						1	7.1	.6
CALM							0	0.0	
COL. TOTALS	14.2	21.3	35.5	28.4			14		7.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

200 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	.8
NNE	8.3						1	8.3	.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	2.9
S	8.3	8.3					2	16.6	2.6
SSW				8.3			1	8.3	11.2
SW			8.3				1	8.3	9.0
WSW							0	0.0	
W							0	0.0	
WNW	16.6	8.3					3	24.9	2.5
NW							0	0.0	
NNW		16.6					2	16.6	4.8
CALM							0	0.0	
COL. TOTALS	49.8	33.2	8.3	8.3			12		3.9

200 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			7.1				1	7.1	8.6
NNE	7.1						1	7.1	2.8
NE			7.1				1	7.1	6.8
ENE	7.1	7.1					2	14.2	2.6
E							0	0.0	
ESE							0	0.0	
SE	7.1						1	7.1	1.8
SSE			7.1				1	7.1	7.7
S							0	0.0	
SSW		7.1			7.1		2	14.2	14.5
SW							0	0.0	
WSW			7.1				1	7.1	7.1
W					7.1		1	7.1	17.2
WNW			7.1	14.2			3	21.3	9.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	21.3	14.2	35.5	14.2	14.2		14		8.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

300 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	4.7
NNE							0	0.0	
NE	8.3						1	8.3	.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		8.3					1	8.3	5.3
S	8.3						1	8.3	1.7
SSW	16.6						2	16.6	1.5
SW					8.3		1	8.3	16.0
WSW	8.3						1	8.3	.3
W		8.3					1	8.3	4.4
WNW		16.6					2	16.6	5.1
NW		8.3					1	8.3	5.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	49.8			8.3		12		4.2

300 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				7.1			1	7.1	10.9
NE				7.1			1	7.1	10.7
ENE	7.1		7.1				2	14.2	4.2
E							0	0.0	
ESE	7.1						1	7.1	1.6
SE			7.1				1	7.1	6.3
SSE							0	0.0	
S							0	0.0	
SSW	7.1						1	7.1	2.6
SW	7.1			7.1			2	14.2	6.0
WSW				7.1			1	7.1	13.7
W							0	0.0	
WNW		14.2			7.1		3	21.3	10.7
NW							0	0.0	
NNW	7.1						1	7.1	2.6
CALM							0	0.0	
COL. TOTALS	35.5	14.2	14.2	28.4	7.1		14		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

500 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3		8.3				2	16.6	3.6
S	8.3		8.3				2	16.6	3.7
SSW							0	0.0	
SW					16.6		2	16.6	20.0
WSW							0	0.0	
W	8.3	8.3	8.3				3	24.9	4.9
WNW	8.3			16.6			3	24.9	9.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	8.3	24.9	16.6	16.6		12		8.1

500 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.1						1	7.1	1.3
NNE		7.1					1	7.1	5.2
NE			7.1	7.1			2	14.2	8.3
ENE							0	0.0	
E							0	0.0	
ESE	7.1						1	7.1	2.7
SE							0	0.0	
SSE	7.1		7.1				2	14.2	5.6
S							0	0.0	
SSW		7.1					1	7.1	3.5
SW			7.1	7.1			2	14.2	9.6
WSW		7.1					1	7.1	3.2
W			7.1				1	7.1	6.6
WNW		7.1					1	7.1	4.7
NW		7.1					1	7.1	3.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	21.3	35.5	28.4	14.2			14		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

750 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		8.3					1	8.3	4.0
SSW			8.3				1	8.3	6.0
SW		8.3	8.3				2	16.6	4.9
WSW				8.3			1	8.3	15.6
W	8.3	8.3			8.3		3	24.9	7.9
WNW	16.6		8.3				3	24.9	4.4
NW	8.3						1	8.3	1.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	24.9	24.9	8.3	8.3		12		6.1

750 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE					9.0		1	9.0	16.3
ENE							0	0.0	
E	9.0						1	9.0	2.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			9.0				1	9.0	19.9
SSW	9.0						1	9.0	2.4
SW		9.0					1	9.0	4.7
WSW		9.0					1	9.0	5.0
W		9.0	9.0			9.0	3	27.0	20.5
WNW			9.0				1	9.0	7.5
NW		9.0					1	9.0	5.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	36.0	27.0		9.0	9.0	11		10.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	2.0
E							0	0.0	
ESE		8.3					1	8.3	3.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		8.3	8.3	8.3			3	24.9	8.1
SW							0	0.0	
WSW					8.3		1	8.3	21.4
W	8.3	16.6		8.3			4	33.2	6.2
WNW							0	0.0	
NW			8.3	8.3			2	16.6	9.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	33.2	16.6	24.9	8.3		12		7.9

1000-METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1		11.1				2	22.2	4.2
S			11.1				1	11.1	7.5
SSW							0	0.0	
SW		11.1		11.1			2	22.2	7.4
WSW	11.1						1	11.1	2.9
W			11.1		22.2		3	33.3	15.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	33.3	11.1	22.2		9		9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

1500 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			9.0	9.0			2	18.0	10.1
SSW				9.0			1	9.0	15.1
SW		9.0					1	9.0	3.3
WSW							0	0.0	
W			9.0				1	9.0	6.7
WNW			9.0		9.0		2	18.0	12.8
NW		9.0		9.0	9.0		3	27.0	11.8
NNW			9.0				1	9.0	6.0
CALM							0	0.0	
COL. TOTALS		18.0	36.0	27.0	18.0		11		10.2

1500 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			14.2				1	14.2	6.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		14.2					1	14.2	5.0
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			28.5				2	28.5	8.0
WSW		14.2					1	14.2	4.6
W					14.2		1	14.2	22.0
WNW					14.2		1	14.2	19.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		28.4	42.7		28.4		7		10.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

2000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				12.5			1	12.5	15.4
WSW							0	0.0	
W			12.5				1	12.5	6.8
WNW		12.5	12.5				2	25.0	6.0
NW			12.5	12.5	12.5		3	37.5	13.0
NNW			12.5				1	12.5	7.8
CALM							0	0.0	
COL. TOTALS		12.5	50.0	25.0	12.5		8		10.1

2000 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				20.0			1	20.0	15.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				20.0			1	20.0	13.0
SW				20.0			1	20.0	14.8
WSW							0	0.0	
W							0	0.0	
WNW		20.0			20.0		2	40.0	11.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0		60.0	20.0		5		13.2

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MONTH OF APRIL 1979 MORNING

THICKNESS (METERS)	SFC	********** INVERSION BASE HEIGHT (METERS) **********										TOTAL
		001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	
001-100	9.0		9.0	9.0	9.0		9.0					45.0
101-250	22.7			13.6	4.5		4.5	4.5				49.8
251-500	4.5											4.5
501-750												
TOTAL	36.2		9.0	22.6	13.5		13.5	4.5				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				22
INVERSION TYPE												
1			4.5	13.6	9.0		9.0					36.1
2	9.0		4.5	9.0	4.5		4.5	4.5				36.0
3	18.1											18.1
4	9.0											9.0
5												

MONTH OF APRIL 1979 AFTERNOON

THICKNESS (METERS)	SFC	********** INVERSION BASE HEIGHT (METERS) **********										TOTAL
		001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	
001-100			4.1	20.8	8.3	4.1	8.3	8.3				53.9
101-250					4.1	4.1	4.1	8.3				20.6
251-500							4.1					4.1
501-750												
TOTAL			4.1	20.8	12.4	8.2	16.5	16.6				
NO INVERSION												20.0
								TOTAL NO. OF OCCURENCES				19
INVERSION TYPE												
1				21.0	10.5	10.5	21.0	15.7				78.7
2			5.2	5.2	5.2			5.2				20.8
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DEER LODGE CO - HIWAY JUNCTION - MET (MAPS)

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR APRIL 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	3	0
101- 250	3	0
251- 500	1	0
501- 750	5	5
751-1000	0	2
1001-1500	0	1
>1500	0	6
TOTAL	12	14
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.9	7.3
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.69	-01.04

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF MAY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	6	1	0	0	0	0	0	0	0	0	7
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	9	1	0	0	0	0	0	0	0	0	14
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	0	0	0	0	0	0	0	0	0	0	13
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	0	0	0	0	0	0	0	0	0	0	14
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	6	2	0	0	0	0	0	0	0	0	8
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	7	2	0	0	0	0	0	0	0	0	14
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	12	3	0	0	0	0	0	0	0	0	15
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											36
TOTAL	16	3	0	0	0	0	0	0	0	0	55

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF MAY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	0	0	0	0	0	0	0	0	0	0	14
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	0	0	0	0	0	0	0	0	0	0	13
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	0	0	0	0	0	0	0	0	0	0	14
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	0	0	0	0	0	0	0	0	0	0	14
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											55
TOTAL	0	0	0	0	0	0	0	0	0	0	55

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF MAY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	B	C	C	M	M
19	M	M	M	D	B	B	B	B	B	C	M	M
20	M	M	M	M	D	B	B	B	B	C	M	M
21	M	M	M	D	B	B	D	B	D	C	M	M
22	M	D	D	D	B	B	D	C	D	D	D	D
23	D	D	D	D	D	B	B	B	D	C	D	D
24	D	D	D	D	D	B	D	C	D	C	C	M
25	M	M	M	D	B	B	B	B	B	M	M	M
26	M	M	M	D	B	B	B	B	B	D	M	M
27	M	M	M	D	B	B	B	B	B	D	D	M
28	M	M	M	D	D	B	B	B	B	D	M	M
29	D	D	D	B	B	B	B	B	B	B	D	M
30	M	M	D	B	D	D	D	B	M	M	M	D
31	M	D	D	B	B	B	B	B	B	C	D	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B=14.2 % C= 0.0 % D=16.1 % E= 0.0 % F= 0.0 %

U= 0.0 % M=69.8 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JUNE 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	24	0	0	0	0	0	0	0	0	0	24
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	28	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	9	0	0	0	0	0	0	0	0	0	9
101-300	12	0	0	1	0	0	0	0	0	0	13
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											8
TOTAL	21	0	0	1	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	11	0	0	0	0	0	0	0	0	0	11
101-300	36	0	0	1	0	0	0	0	0	0	37
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											70
TOTAL	49	0	0	1	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JUNE 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	1	0	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	1	0	1	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	0	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											118
TOTAL	0	0	1	0	1	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JUNE 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	D	B	B	M	M	C	C	D	M	M
2	E	M	E	D	B	M	C	C	C	D	M	M
3	M	M	M	D	B	M	C	C	C	D	M	M
4	M	E	E	D	B	M	M	C	C	D	M	E
5	E	E	E	D	C	C	B	C	C	D	D	M
6	M	M	M	D	C	C	C	C	C	D	D	D
7	M	M	M	D	C	C	C	C	C	D	D	E
8	M	M	M	D	C	C	C	C	C	D	M	M
9	M	M	M	D	C	C	C	C	C	D	D	D
10	D	D	D	C	C	C	C	D	D	D	M	E
11	M	M	D	C	C	C	C	M	C	D	M	E
12	E	E	M	D	C	C	C	C	D	D	M	M
13	M	E	E	D	C	C	C	C	C	M	M	M
14	M	M	D	B	M	M	C	C	C	D	M	M
15	D	D	D	B	B	C	C	C	C	C	D	C
16	M	M	M	D	C	C	C	C	C	C	M	M
17	M	E	E	D	C	M	M	C	C	D	M	E
18	E	M	M	D	C	C	C	D	D	D	M	D
19	M	M	M	D	C	C	C	C	C	D	M	E
20	E	E	E	D	C	C	C	C	C	D	M	E
21	E	E	E	D	B	C	C	C	C	D	D	D
22	D	E	E	D	C	C	C	C	C	D	M	M
23	M	M	M	D	B	C	C	C	C	D	M	D
24	M	E	M	D	B	B	C	M	C	D	D	D
25	D	M	E	D	C	C	C	C	C	C	D	D
26	M	M	M	D	B	M	C	C	C	M	M	M
27	E	E	E	D	M	M	M	C	C	D	M	M
28	E	E	E	D	B	M	C	C	C	E	M	M
29	E	E	D	C	B	M	C	C	C	E	M	M
30	D	M	E	D	M	D	M	M	C	D	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 4.4 % C=32.5 % D=22.5 % E=11.7 % F= 0.0 %

U= 0.0 % M=28.9 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JULY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	10	0	0	0	0	0	0	0	0	0	10
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	22	0	0	0	0	0	0	0	0	0	26
---TIME 601-1200 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	1	0	0	0	0	0	0	26
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	0	0	0	0	0	0	0	0	26
---TIME 1801-2400 MST											
001-100	9	0	0	0	0	0	0	0	0	0	9
101-300	7	0	0	0	0	0	0	0	0	0	7
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	16	0	0	0	0	0	0	0	0	0	25
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	19	0	0	1	0	0	0	0	0	0	20
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											64
TOTAL	38	0	0	1	0	0	0	0	0	0	103

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JULY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	0	0	0	1	0	0	0	0	0	0	25
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	1	0	0	0	0	0	0	0	26
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	0	0	0	0	0	0	0	0	26
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	0	0	0	0	0	0	0	25
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											100
TOTAL	0	0	1	1	0	0	0	0	0	0	102

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JULY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	M	D	B	C	C	D	D	D	D	D
2	M	M	M	D	B	M	M	C	D	E	M	M
3	M	M	M	D	B	B	D	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	C	D	D	D
6	M	M	M	D	B	B	M	C	D	C	D	M
7	M	M	M	D	M	C	C	C	C	D	D	M
8	M	M	E	D	B	C	D	M	D	D	D	D
9	D	D	D	B	C	C	C	C	C	D	M	M
10	M	M	M	D	B	C	C	C	C	D	M	M
11	D	D	D	B	M	C	C	C	C	C	M	M
12	M	M	M	D	M	M	M	C	C	D	M	E
13	E	E	E	D	C	C	C	C	C	D	M	M
14	M	M	E	D	C	C	C	C	C	D	M	E
15	E	E	E	E	D	C	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	D	B	M	D	C	C	D	D	M
20	D	D	D	B	M	D	D	C	B	C	M	M
21	E	M	M	D	B	M	M	M	C	D	M	E
22	E	E	E	D	B	M	M	M	C	D	M	E
23	E	E	E	D	C	C	C	C	C	D	M	E
24	M	E	E	D	B	C	D	D	D	D	E	E
25	E	M	M	D	C	C	C	C	C	D	M	M
26	M	E	M	D	C	C	C	C	C	D	M	M
27	E	E	D	B	B	C	C	C	C	D	D	M
28	M	E	E	D	M	B	D	D	C	D	C	D
29	M	M	E	D	B	M	C	C	C	C	M	E
30	E	E	E	D	M	M	C	C	C	D	M	M
31	M	M	E	D	B	M	C	C	C	D	D	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 5.6 % C=19.6 % D=22.0 % E=10.8 % F= 0.0 %

U= 0.0 % M=41.9 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF AUGUST 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	7	0	0	0	0	0	0	0	0	0	7
101-300	19	0	1	0	0	0	0	0	0	0	20
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	28	0	1	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	18	0	0	0	0	0	0	0	0	0	18
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	28	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	25	0	0	0	0	0	0	0	0	0	25
101-300	28	0	1	0	0	0	0	0	0	0	29
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											67
TOTAL	56	0	1	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF AUGUST 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	1	0	0	1	0	0	2
301-500		0	0	0	0	0	1	0	0	0	1
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL		0	0	0	1	0	1	1	0	0	31
---TIME 601-1200 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	0	0	0	0
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL		0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	0	0	0	0
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL		0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	1	1	0	0	0	0	0	2
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL		0	0	1	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	1	2	0	0	1	0	0	4
301-500		0	0	0	0	0	1	0	0	0	1
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											119
TOTAL		0	0	1	2	0	1	1	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF AUGUST 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	D	B	M	C	C	C	D	M	D
2	D	D	D	B	B	M	M	C	C	D	M	M
3	M	M	M	D	B	M	C	C	C	D	M	E
4	E	E	E	D	B	C	C	C	C	D	M	E
5	E	E	D	D	B	B	M	C	C	C	M	E
6	M	E	E	D	C	C	C	C	C	D	M	M
7	M	E	E	D	C	C	C	C	C	D	M	M
8	E	E	E	D	M	M	C	C	C	D	M	E
9	E	E	E	D	C	C	C	D	C	D	E	M
10	M	M	M	D	C	C	C	C	C	D	M	M
11	M	M	E	D	M	C	C	C	C	D	M	M
12	E	E	M	D	B	M	C	C	C	D	D	E
13	M	D	D	D	B	D	D	M	D	D	D	D
14	M	M	D	D	C	C	C	C	C	D	M	M
15	M	M	M	D	C	C	C	C	C	D	M	D
16	D	D	M	D	B	M	D	C	C	M	D	M
17	M	M	M	D	C	C	C	C	C	D	M	M
18	M	M	M	D	C	C	C	C	C	D	M	E
19	E	M	M	M	D	C	C	C	D	M	M	M
20	M	M	M	D	B	M	C	C	C	D	D	D
21	M	M	M	D	M	M	C	C	D	M	M	M
22	M	M	M	D	B	D	D	D	C	D	M	M
23	M	M	M	D	C	C	C	C	C	D	M	M
24	E	E	E	D	M	C	C	C	U	M	M	M
25	E	E	E	M	D	C	C	C	U	D	M	D
26	D	D	M	D	B	M	M	C	D	D	D	D
27	D	M	D	D	M	M	C	C	C	M	M	M
28	E	E	E	D	B	M	C	C	C	D	M	E
29	E	E	E	D	B	M	C	C	C	D	M	E
30	E	E	E	D	B	M	C	D	C	D	M	M
31	M	D	M	D	M	M	C	C	C	D	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 4.3 % C=27.2 % D=24.7 % E=11.6 % F= 0.0 %

U= 0.5 % M=31.7 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF SEPT. 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	9	0	1	0	0	0	0	0	0	0	10
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	27	0	1	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	3	0	0	0	0	0	0	0	0	0	3
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	4	0	0	1	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	12	0	0	0	0	0	0	0	0	0	12
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	25	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	21	0	1	1	0	0	0	0	0	0	23
101-300	27	0	0	0	0	0	0	0	0	0	27
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											62
TOTAL	56	0	1	1	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF SEPT. 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	2	0	0	0	0	0	2
101-300	0	0	1	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	1	1	2	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	1	0	0	1	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	1	0	0	1	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	1	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	2	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	2	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	2	0	0	0	0	0	3
101-300	0	1	1	3	1	0	0	0	0	0	6
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											111
TOTAL	0	1	1	4	3	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF SEPT. 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	D	C	C	C	M	C	C	M	M	E
2	E	E	E	C	D	C	C	C	D	M	M	E
3	E	E	M	M	D	C	D	C	C	D	M	M
4	M	M	M	M	D	D	C	C	C	M	E	E
5	M	M	M	D	D	D	D	D	D	E	D	M
6	D	D	D	D	C	C	C	C	C	D	M	M
7	M	M	D	D	B	B	C	C	D	D	D	D
8	D	D	D	D	C	C	C	C	D	E	M	M
9	M	M	M	M	D	C	C	C	D	D	M	M
10	E	E	E	E	D	C	D	D	D	D	E	E
11	E	E	E	E	D	D	D	D	D	E	E	E
12	E	E	D	D	D	D	C	C	C	D	D	M
13	M	M	M	D	B	C	C	C	C	D	E	M
14	M	E	E	M	B	D	M	B	C	D	M	M
15	M	M	M	D	D	C	C	C	D	D	D	D
16	D	D	D	D	C	C	C	C	C	D	M	M
17	M	M	M	M	D	M	M	C	C	E	M	M
18	M	M	M	D	D	D	D	D	D	M	M	M
19	M	M	M	M	B	D	D	C	C	E	M	M
20	M	M	M	D	C	C	C	C	C	M	M	M
21	M	M	M	M	D	C	C	C	D	E	E	E
22	M	M	M	M	D	C	C	C	D	D	D	M
23	M	M	M	M	D	M	M	C	D	M	E	E
24	E	E	E	M	D	B	C	C	D	M	E	E
25	E	M	E	D	C	C	C	C	D	M	E	E
26	E	E	E	M	D	C	C	C	D	M	E	E
27	M	M	E	M	D	C	C	D	D	M	M	M
28	M	D	D	D	D	D	M	D	D	M	M	M
29	M	M	M	D	C	C	M	C	C	D	E	E
30	M	M	M	M	D	C	C	C	D	D	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.9 % C=22.2 % D=29.4 % E=14.7 % F= 0.0 %

U= 0.0 % M=31.7 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF OCTOBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	4	0	0	0	0	0	0	0	0	0	4
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	5	0	0	0	0	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	25	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	2	8	2	0	0	0	0	0	0	0	12
301-500	1	0	1	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											15
TOTAL	4	9	3	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	1	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	14	0	0	0	0	0	0	0	0	0	14
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	24	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	19	1	0	0	0	0	0	0	0	0	20
101-300	28	8	2	1	0	0	0	0	0	0	39
301-500	6	0	1	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											58
TOTAL	53	9	3	1	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF OCTOBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	1	0	0	1
101-300	0	0	1	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	1	1	0	0	0	1	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	1	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	1	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	1	0	0	1
101-300	0	0	3	1	0	0	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											119
TOTAL	0	0	3	1	0	0	0	1	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF OCTOBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	C	D	D	D	C	C	C	C	D	D	D	E
2	M	M	M	D	C	C	C	C	C	M	E	E
3	M	M	M	M	D	C	C	C	D	D	D	M
4	M	M	M	M	D	C	C	C	D	M	E	E
5	E	M	M	M	D	B	C	C	D	M	E	E
6	E	M	M	M	D	B	C	C	D	M	E	E
7	E	M	M	M	D	C	C	C	D	M	M	M
8	M	E	M	D	C	C	C	C	C	D	E	E
9	E	M	M	M	D	C	C	C	D	D	M	M
10	M	M	M	D	C	C	C	C	D	D	D	D
11	D	D	D	D	C	C	C	C	D	D	D	D
12	D	D	D	D	C	C	C	C	C	M	M	M
13	M	M	M	M	B	D	C	C	D	M	M	E
14	M	M	M	M	B	C	C	D	D	M	M	E
15	E	M	E	M	D	C	C	C	D	M	E	E
16	M	M	M	M	B	D	C	C	D	D	M	M
17	M	E	E	M	B	D	C	C	D	D	D	M
18	M	M	E	M	C	D	C	C	D	M	E	E
19	M	E	E	M	D	C	C	D	D	M	E	M
20	E	E	E	D	D	C	C	C	D	D	D	D
21	D	D	D	D	D	C	C	C	D	M	M	M
22	M	M	M	E	D	C	C	C	D	M	M	M
23	E	E	E	D	C	C	C	D	D	E	E	E
24	E	D	D	D	C	C	C	D	D	E	M	M
25	M	M	M	M	M	C	C	C	D	M	M	M
26	M	M	E	M	M	D	C	C	B	M	M	M
27	M	E	M	M	D	C	C	C	C	D	D	D
28	D	D	M	M	D	C	C	C	D	M	M	E
29	D	D	D	D	C	C	C	C	D	E	M	M
30	M	M	M	M	D	C	C	C	D	M	E	E
31	E	M	M	M	C	D	C	C	D	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.9 % C=25.5 % D=27.4 % E=13.2 % F= 0.0 %

U= 0.0 % M=32.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT ELTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF NOVEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	21	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	4	0	1	0	0	0	0	0	0	0	5
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											16
TOTAL	13	0	1	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	2	0	0	0	0	0	0	0	0	0	2
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	6	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	5	0	0	0	0	0	0	0	0	0	5
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	5	0	1	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											8
TOTAL	21	0	1	0	0	0	0	0	0	0	30
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	8	0	0	0	0	0	0	0	0	0	8
101-300	29	0	1	0	0	0	0	0	0	0	30
301-500	24	0	1	0	0	0	0	0	0	0	25
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											57
TOTAL	61	0	2	0	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF NOVEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	D	M	E	E	E
2	M	E	M	M	D	C	C	D	D	M	M	M
3	M	M	M	M	M	D	D	D	D	E	E	E
4	D	D	D	D	D	D*	D	D	D	D	D	D
5	D	D	E	E	D	C	C	C	D	M	M	M
6	M	M	M	M	D	C	C	M	M	M	E	E
7	E	E	E	E	E	D	C	C	C	E	E	E
8	E	M	M	E	D	C	C	C	C	E	E	M
9	D	D	D	D	C	D	C	C	C	D	D	D
10	D	D	D	D	D	C	C	C	D	D	D	D
11	D	D	D	D	B	C	C	C	C	D	D	D
12	D	D	D	D	C	C	C	C	D	D	D	D
13	D	D	D	D	B	B	B	B	M	M	M	M
14	M	M	M	M	M	D	C	C	D	M	M	M
15	M	M	M	M	M	D	B	B	M	M	M	M
16	M	M	M	D	C	C	C	D	E	M	M	E
17	E	E	E	D	C	C	D	D	D	D	E	M
18	D	D	M	M	D	B	D	D	D	D	D	D
19	D	D	D	D	D	D	D	D	D	D	D	D
20	D	M	M	M	D	B	B	D	D	D	D	D
21	D	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	D	D	B	B	D	D	D	D
26	M	M	M	M	M	D	C	C	D	D	M	M
27	M	M	M	M	M	M	M	M	M	E	E	E
28	E	E	E	D	D	D	D	D	D	E	M	M
29	E	M	M	M	M	E	E	M	M	M	M	M
30	M	M	D	D	D	C	D	C	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 3.3 % C=11.1 % D=33.6 % E=10.8 % F= 0.0 %

U= 0.0 % M=41.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF NOVEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	2	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	3	0	0	0	0	0	0	0	0	3
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	3	0	1	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	2	0	0	0	0	0	0	3
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	1	2	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	1	1	0	0	0	0	0	2
301-500	0	0	1	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	2	1	1	0	0	0	0	0	30
FREQUENCY SUMMARY FOR SECOND INVERSION											
001-100	0	3	1	1	0	0	0	0	0	0	5
101-300	0	0	1	5	1	0	0	0	0	0	7
301-500	0	0	1	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											107
TOTAL	0	3	3	6	1	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF DECEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	5	0	0	0	0	0	0	0	0	0	5
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	27	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	12	0	1	0	0	0	0	0	0	0	13
301-500	5	0	0	0	0	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	19	0	1	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	6	1	1	0	0	0	0	0	0	0	8
301-500	2	2	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											17
TOTAL	9	4	1	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	4	0	0	0	0	0	0	0	0	0	4
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	25	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	12	1	0	0	0	0	0	0	0	0	13
101-300	55	1	2	0	0	0	0	0	0	0	58
301-500	13	2	0	0	0	0	0	0	0	0	15
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											38
TOTAL	80	4	2	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF DECEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	1	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	1	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	1	0	0	0	0	0	2
301-500	0	0	1	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	2	0	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	1	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	1	0	0	0	0	0	0	0	1
NO INVERSION											28
TOTAL	0	0	2	0	1	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	1	1	0	0	0	0	0	0	0	2
301-500	0	0	0	1	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	1	1	1	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	1	3	0	2	0	0	0	0	0	6
301-500	0	0	1	2	0	0	0	0	0	0	3
501-900	0	0	1	0	0	0	0	0	0	0	1
NO INVERSION											114
TOTAL	0	1	5	2	2	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JANUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	6	1	1	1	0	0	0	0	0	0	9
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											1
TOTAL	27	1	1	1	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	4	1	0	1	0	0	0	0	0	0	6
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											3
TOTAL	26	1	0	1	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	2	0	0	0	0	0	0	0	0	2
101-300	8	2	0	1	0	0	0	0	0	0	11
301-500	5	0	0	0	0	0	0	0	0	0	5
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											11
TOTAL	15	4	0	1	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	4	0	0	0	0	0	0	0	0	0	4
101-300	15	0	0	0	0	0	0	0	0	0	15
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	28	0	0	0	0	0	0	0	0	0	31
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	14	4	1	2	0	0	0	0	0	0	21
101-300	47	2	0	1	0	0	0	0	0	0	50
301-500	29	0	0	0	0	0	0	0	0	0	29
501-900	6	0	0	0	0	0	0	0	0	0	6
NO INVERSION											18
TOTAL	96	6	1	3	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF DECEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	D	D	B	C	M	C	C	C	D
2	D	D	M	M	M	M	B	C	D	M	M	M
3	M	M	D	D	D	D	D	D	D	D	D	D
4	D	D	D	D	D	D	D	D	D	D	E	E
5	E	E	E	M	M	M	E	E	E	M	M	M
6	M	M	M	M	M	M	D	D	E	M	M	M
7	E	M	M	M	M	M	D	D	M	M	M	M
8	M	M	M	M	M	M	M	D	M	E	E	E
9	M	M	M	M	D	D	C	C	M	M	E	E
10	M	E	E	M	M	M	D	D	M	M	M	M
11	M	M	D	D	D	D	D	D	M	M	E	E
12	M	M	M	M	D	D	D	D	E	M	M	M
13	M	M	M	M	E	E	D	D	E	M	M	M
14	E	E	E	E	D	D	D	D	E	E	E	E
15	E	E	D	D	D	D	D	D	D	D	M	M
16	E	E	E	M	M	M	M	E	E	M	M	M
17	M	M	M	M	M	M	M	E	E	M	E	E
18	E	M	M	M	M	M	D	D	D	D	D	M
19	M	M	D	D	D	D	D	D	D	D	D	D
20	D	D	D	D	D	D	D	D	M	M	M	M
21	M	E	D	D	D	C	C	C	D	E	E	E
22	E	E	D	D	D	D	D	D	E	E	E	E
23	E	M	M	M	M	D	D	D	D	D	D	D
24	D	D	D	D	D	D	D	D	E	E	E	E
25	E	M	M	D	C	C	C	D	E	E	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	E	M	M	M	M	D	D	D	D
28	D	D	D	D	D	D	D	D	E	M	M	M
29	E	M	M	M	M	M	M	D	D	D	M	M
30	M	M	M	M	M	M	D	D	D	M	M	M
31	M	M	M	M	M	M	D	M	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.5 % C= 2.7 % D=35.2 % E=17.2 % F= 0.0 %

U= 0.0 % M=44.4 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JANUARY 1979

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	2	0	0	0	0	0	2
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	2	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	1	0	4	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	2	2	1	0	0	0	0	0	5
301-500	0	0	0	1	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	2	3	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	1	1	1	0	0	0	0	0	0	3
301-500	0	1	1	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	2	2	1	1	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	1	0	0	1	0	0	0	0	0	2
101-300	0	0	2	1	0	1	1	0	0	0	5
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	0	1	2	1	1	1	1	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	1	0	0	4	0	0	0	0	0	5
101-300	0	1	6	4	1	1	1	0	0	0	14
301-500	0	1	1	1	2	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											100
TOTAL	0	3	7	5	7	1	1	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF JANUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	E	E	M	M	M
2	M	M	M	M	M	M	D	D	D	M	M	M
3	M	M	M	M	M	M	M	D	D	M	M	D
4	D	D	D	M	M	D	B	B	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	E	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	B	B	M	M	M	M	M
10	M	M	M	D	D	D	E	E	E	E	E	E
11	M	M	M	M	M	M	M	M	M	M	M	M
12	D	D	D	D	D	D	B	B	M	M	M	M
13	M	M	M	E	E	D	D	D	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	E	D	D	E	E	E	M
16	E	E	E	E	M	M	M	M	M	M	M	M
17	M	M	M	M	M	D	D	M	M	M	M	M
18	M	M	M	M	D	B	D	B	M	M	M	M
19	M	M	M	M	M	D	D	D	D	D	M	M
20	M	M	M	M	D	D	E	D	D	D	E	E
21	E	E	E	E	D	D	D	D	D	D	D	D
22	M	M	M	M	M	M	B	B	C	C	C	D
23	D	D	D	D	M	E	M	M	M	M	M	M
24	M	M	M	E	E	E	D	D	M	M	M	M
25	E	E	E	M	M	D	D	D	D	M	M	M
26	E	E	E	E	M	M	M	D	D	M	M	M
27	M	M	M	M	M	D	C	C	D	D	M	M
28	M	M	M	M	D	D	B	B	D	D	D	M
29	M	M	E	E	M	D	B	B	D	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	D	D	M	M	M	M	U

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 3.8 % C= 0.5 % D=19.9 % E=10.5 % F= 0.0 %

U= 0.3 % M=65.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF FEBRUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	2	1	0	0	0	0	0	0	0	0	3
101-300	16	1	0	0	0	0	0	0	0	0	17
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	21	2	0	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	2	1	0	0	0	0	0	0	0	0	3
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	21	1	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	2	0	0	0	0	0	0	0	0	2
101-300	3	2	0	0	0	0	0	0	0	0	5
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											21
TOTAL	3	4	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	5	0	0	0	0	0	0	0	0	0	5
101-300	17	0	0	0	0	0	0	0	0	0	17
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	22	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	9	4	0	0	0	0	0	0	0	0	13
101-300	55	3	0	0	0	0	0	0	0	0	58
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											38
TOTAL	67	7	0	0	0	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF FEBRUARY 1979

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	1	1	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	1	1	1	1	0	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											23
TOTAL	0	1	1	1	2	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	2	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	0	2	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	1	2	4	1	0	0	0	0	0	8
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											103
TOTAL	0	1	2	4	2	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF FEBRUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	D	D	M	M	M
2	M	M	M	M	M	M	M	D	D	D	M	M
3	E	E	E	E	D	D	D	D	D	D	M	M
4	M	M	M	M	M	M	M	M	D	C	D	E
5	E	D	D	E	E	D	D	D	D	E	E	E
6	E	E	M	M	M	D	C	C	D	D	D	D
7	D	D	E	D	D	D	D	D	D	D	E	M
8	M	M	M	M	E	E	E	E	E	E	E	E
9	E	E	E	E	E	E	D	D	E	E	E	E
10	E	E	E	E	D	D	D	D	D	E	E	E
11	E	E	E	E	M	D	D	D	D	E	E	E
12	D	D	D	E	D	D	D	D	D	E	E	D
13	D	D	E	E	D	D	D	D	D	E	E	D
14	D	D	D	D	D	D	D	D	D	D	D	D
15	D	D	D	D	D	D	D	D	D	M	M	M
16	M	M	M	M	M	M	E	E	M	M	E	E
17	M	E	M	E	M	E	D	D	D	E	E	E
18	E	E	E	E	E	D	D	D	E	E	E	M
19	M	M	M	M	M	M	D	C	D	M	M	M
20	M	M	M	M	M	D	D	D	D	M	M	M
21	E	E	M	M	M	M	M	D	D	D	D	D
22	M	M	D	D	C	C	C	C	D	D	D	D
23	D	M	M	M	M	D	D	D	D	M	M	M
24	M	M	M	E	E	D	D	D	D	E	E	E
25	E	E	E	E	E	D	D	D	D	E	E	E
26	M	E	E	M	M	D	D	D	D	M	M	M
27	D	M	M	M	D	D	C	D	E	E	E	E
28	E	M	E	M	D	C	C	C	D	D	D	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 3.9 % D=38.4 % E=28.3 % F= 0.0 %

U= 0.0 % M=29.5 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF MARCH 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	8	1	0	0	0	0	0	0	0	0	9
101-300	17	1	0	0	0	0	0	0	0	0	18
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	27	2	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	7	3	0	0	0	0	1	0	0	0	11
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	13	3	0	0	0	0	1	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	1	0	0	0	0	0	0	0	0	1
101-300	1	3	0	0	0	0	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	1	4	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	11	1	0	0	0	0	0	0	0	0	12
101-300	12	0	1	1	0	0	0	0	0	0	14
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	24	1	1	1	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	22	3	0	0	0	0	0	0	0	0	25
101-300	37	7	1	1	0	0	1	0	0	0	47
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											46
TOTAL	65	10	1	1	0	0	1	0	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF MARCH 1979

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	1	0	0	0	0	0	1
301-500	0	0	1	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	1	0	2	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	2	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	1	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	1	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	1	0	0	1
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	1	0	0	0	0	1	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	1	0	0	1	0	0	3
101-300	0	0	1	1	2	0	0	0	0	0	4
301-500	0	0	1	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											116
TOTAL	0	0	2	2	3	0	0	1	0	0	124

ACOUSTIC RADAR ANALYSIS

DEER LODGE VALLEY DISPERSION STUDY MONTH OF MARCH 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	D	D	D	B	M	C	C	B	D	D	M
2	M	M	M	M	M	D	C	C	C	M	M	M
3	M	M	M	M	M	M	M	C	C	M	M	M
4	M	E	E	E	E	E	E	E	E	M	M	E
5	E	E	D	D	D	D	M	D	D	D	M	M
6	E	D	E	E	E	D	D	D	D	M	E	E
7	E	E	E	D	D	D	D	D	E	E	E	D
8	E	D	D	D	D	D	C	C	C	M	M	M
9	D	D	M	E	D	M	B	C	C	M	M	M
10	M	M	M	M	M	D	D	D	D	D	M	M
11	M	M	M	M	D	M	C	C	D	M	M	M
12	E	M	M	E	D	D	D	E	D	E	E	M
13	M	M	E	E	D	C	C	C	C	M	M	E
14	M	M	M	M	D	D	M	C	D	M	E	E
15	M	M	M	M	E	D	C	E	E	M	E	M
16	M	M	M	E	D	M	C	D	D	D	D	D
17	M	M	M	M	M	M	D	D	D	D	D	M
18	M	M	M	M	M	D	M	D	D	D	D	D
19	D	D	M	D	B	C	C	C	D	D	D	M
20	M	D	D	D	B	M	M	C	C	D	M	M
21	M	E	E	E	C	D	M	C	C	M	E	E
22	M	M	M	D	C	C	C	C	C	D	M	M
23	E	M	M	M	D	D	C	C	C	M	E	E
24	M	M	M	E	D	C	C	C	D	D	M	M
25	M	M	D	D	C	C	D	C	C	D	D	D
26	M	D	D	D	C	C	C	D	D	D	D	M
27	M	M	M	M	D	D	C	C	C	D	D	D
28	D	M	M	M	M	D	D	D	D	E	M	M
29	M	M	M	D	C	C	C	D	C	D	M	M
30	M	M	M	D	C	C	C	C	C	D	M	M
31	M	M	M	D	C	C	C	C	C	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.9 % C=10.9 % D=31.2 % E=12.1 % F= 0.0 %

G= 0.3 % M=37.9 %

NOTE: C=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA TAKEN AT SITE

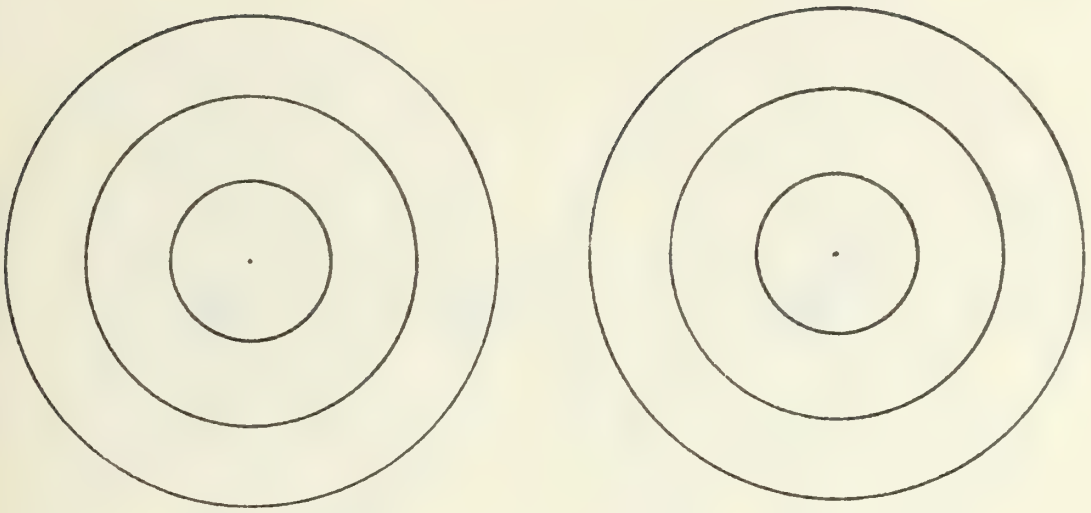
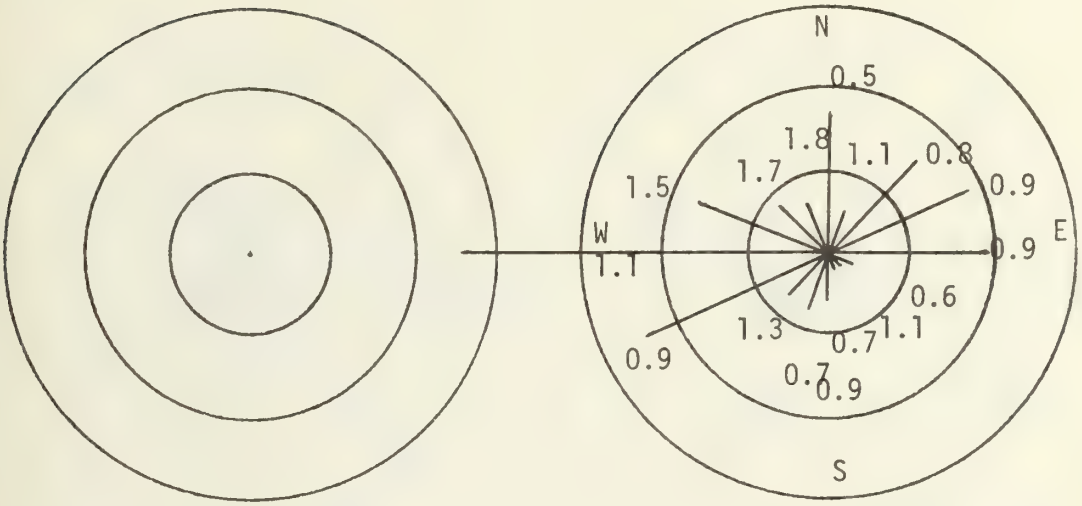
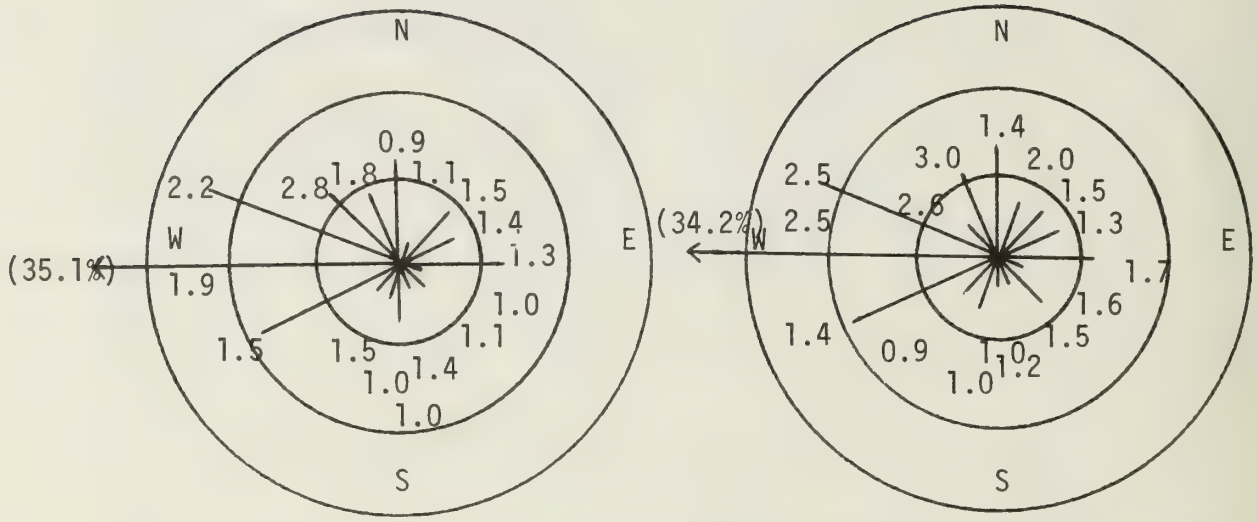


Figure
Monthly Wind Roses
Billings Central Park, Montana



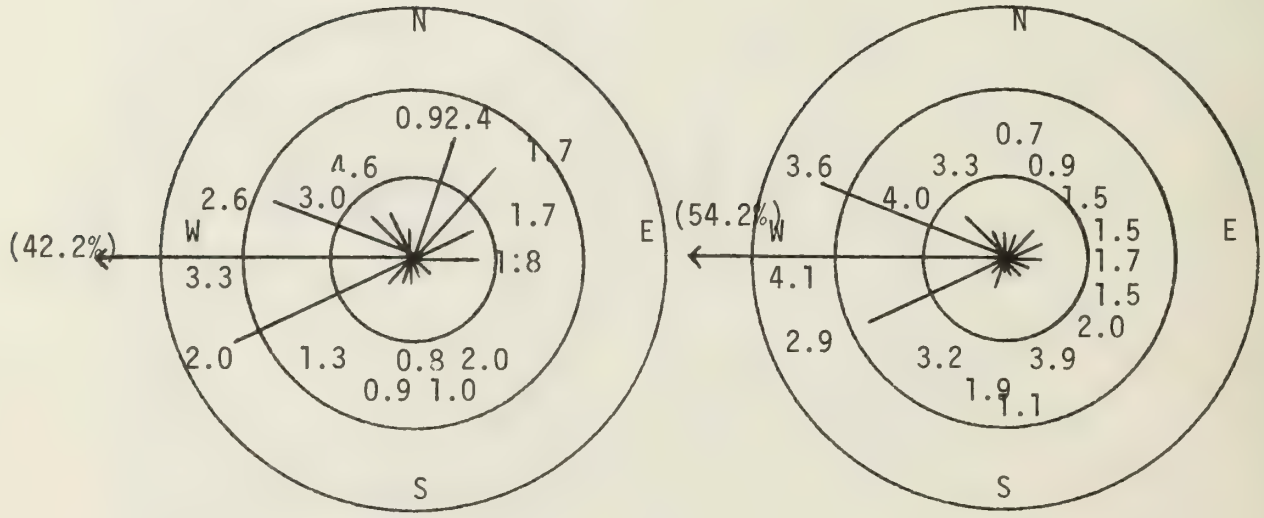
August 1978
Calm 12.8%
(Total Hours 447)



September 1978
Calm 9.2%
(Total Hours 640)

October 1978
Calm 0.8%
(Total Hours 602)

Figure
Monthly Wind Roses
Billings Central Park, Montana



November 1978
Calm 0.0%
(Total Hours 517)

December 1978
Calm 0.0%
(Total Hours 399)

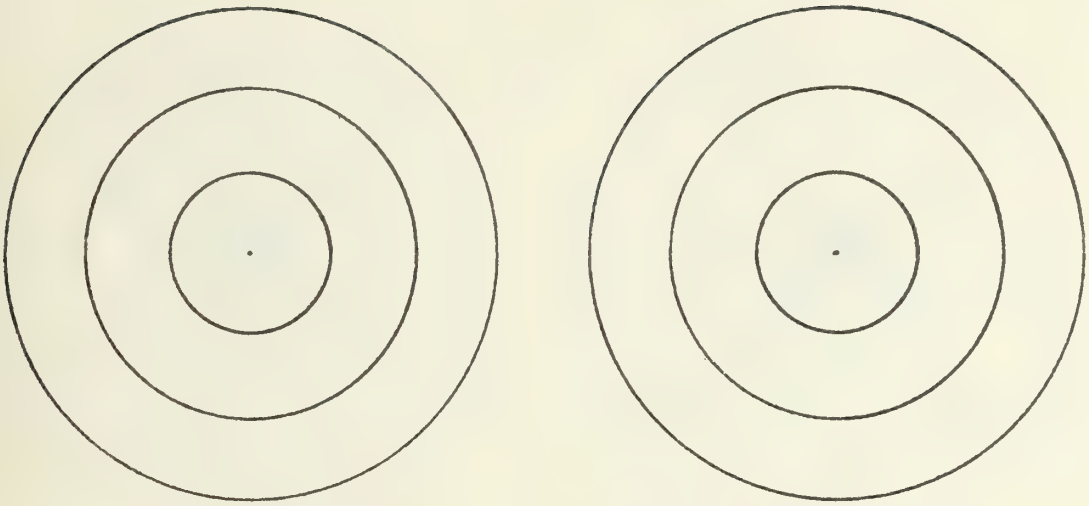
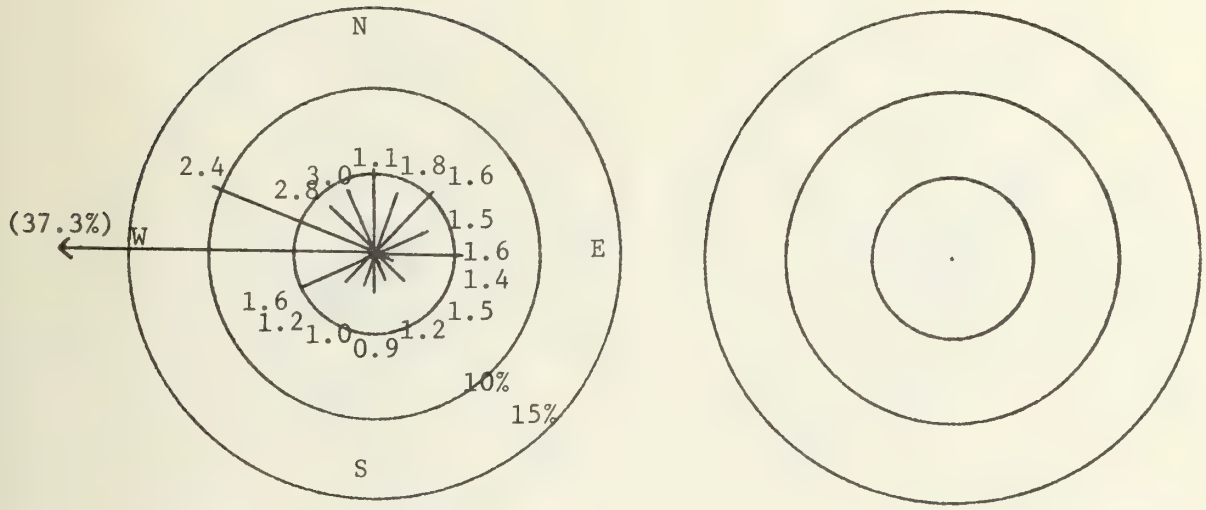


Figure
Seasonal Wind Roses
Billings Central Park Montana



Autumn 1978
Calm 3.6%
(Total Hours 1759)

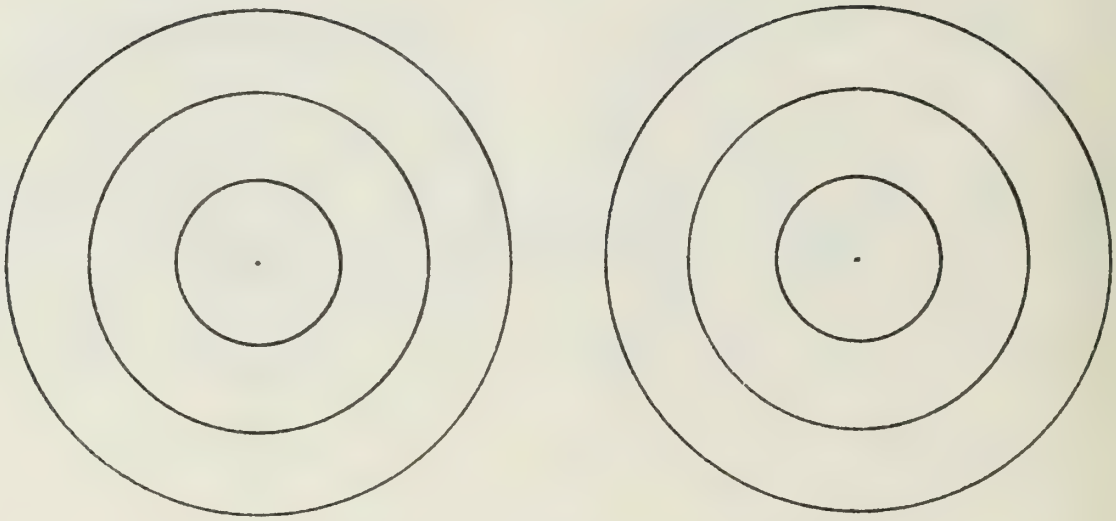
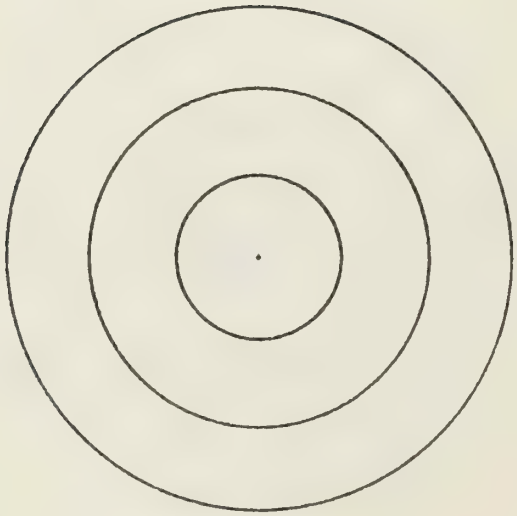
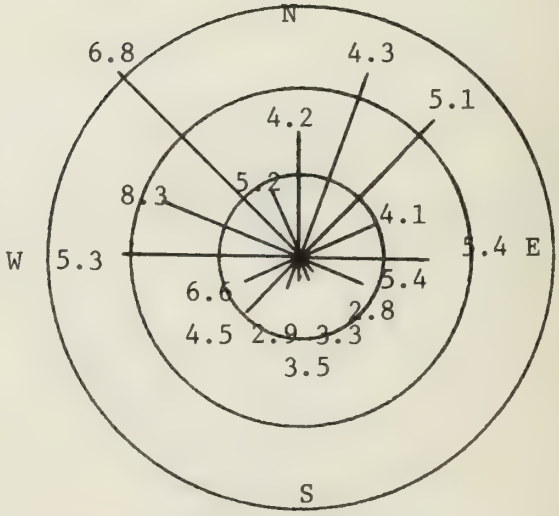
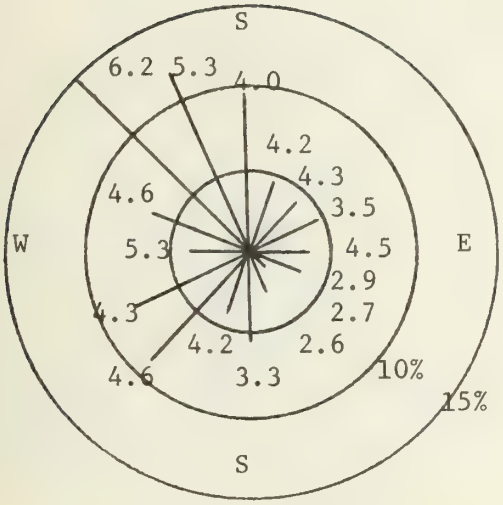


Figure
Monthly Wind Roses
National Weather Service
Billings, Montana

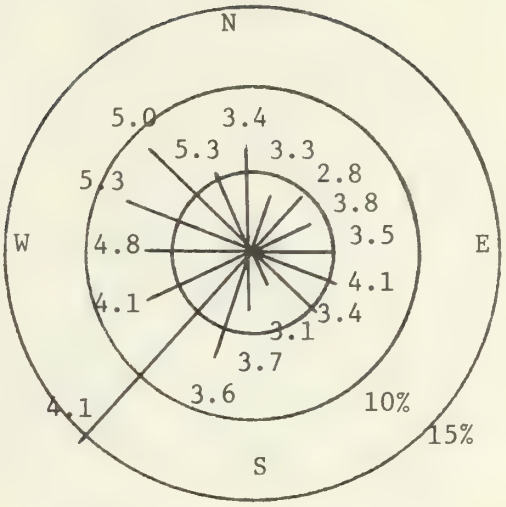




April 1978
Calm 1.7%
(Total Hours 240)

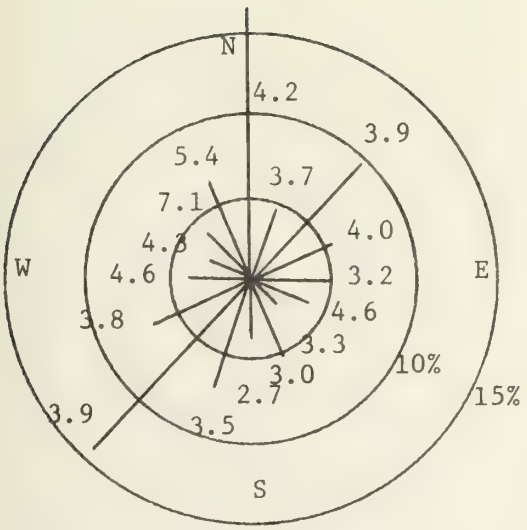


May 1978
Calm 2.0%
(Total Hours 248)

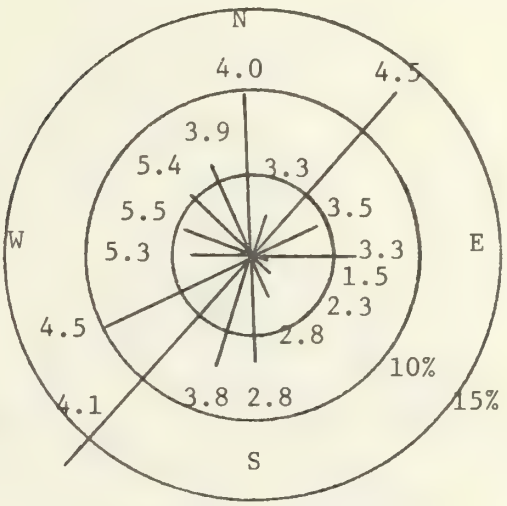


June 1978
Calm 2.5%
(Total Hours 240)

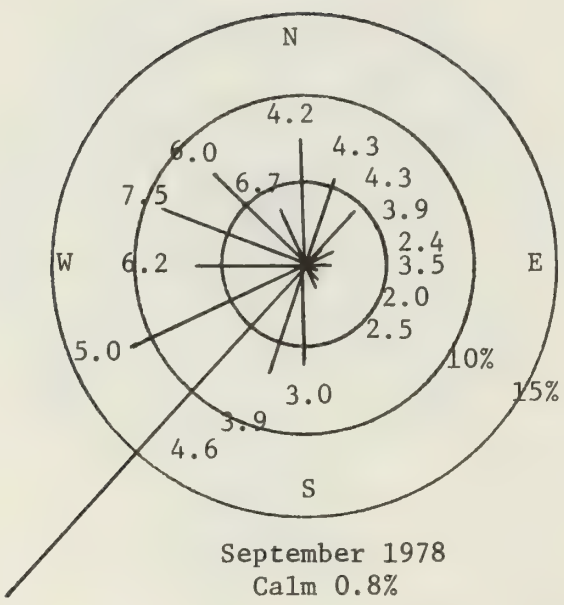
Figure
Monthly Wind Roses
National Weather Service
Billings, Montana



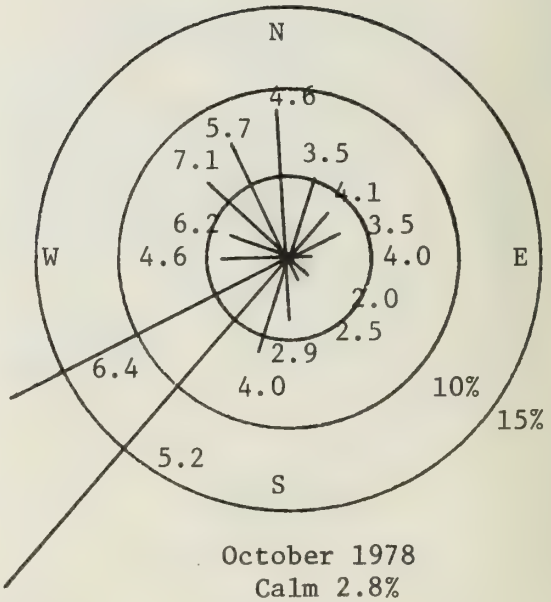
July 1978
Calm 3.2%
(Total Hours 248)



August 1978
Calm 2.4%
(Total Hours 248)

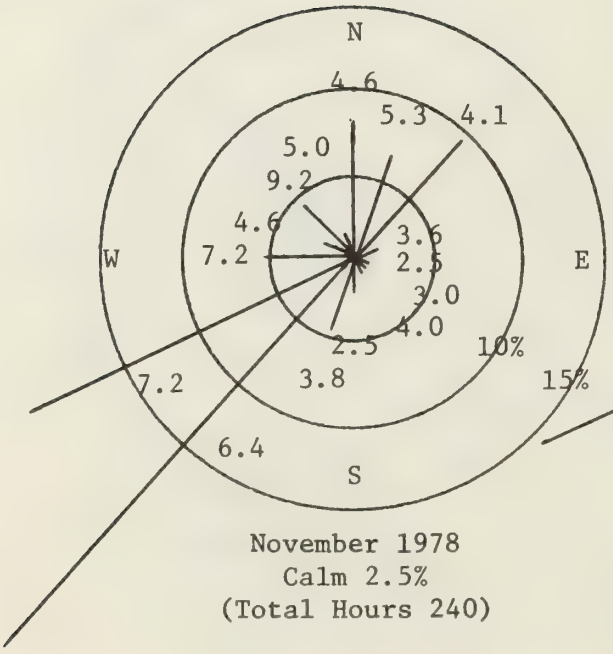


September 1978
Calm 0.8%
(Total Hours 239)

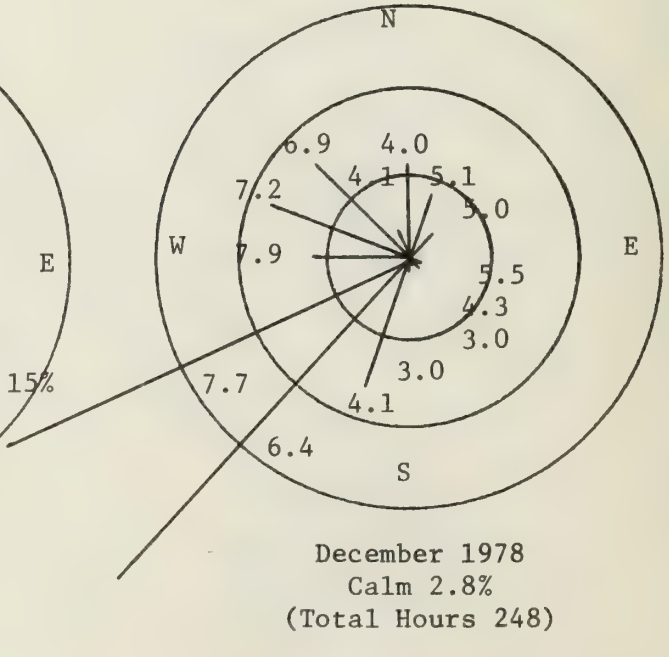


October 1978
Calm 2.8%
(Total Hours 248)

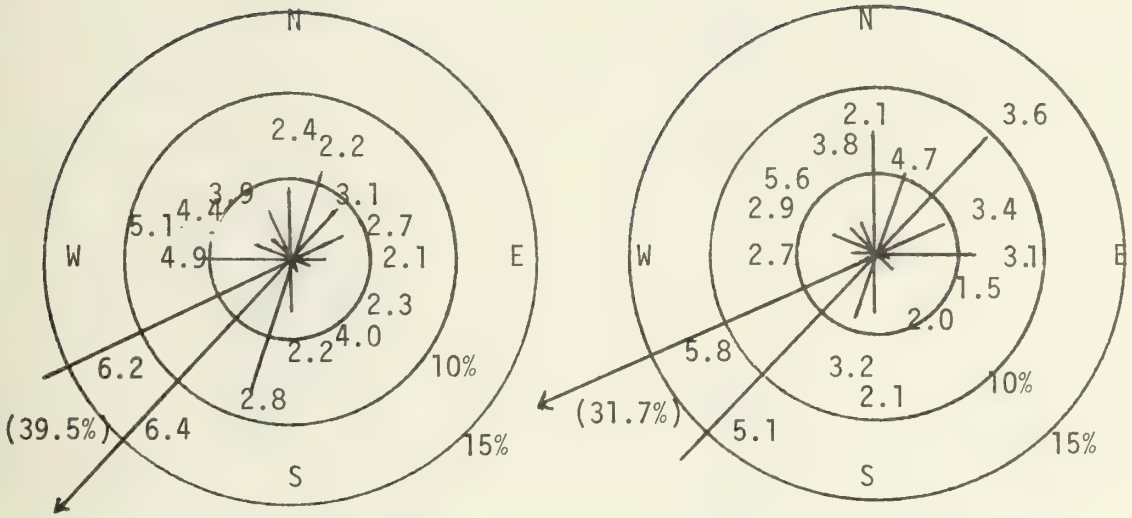
Figure
Monthly Wind Roses
National Weather Service
Billings, Montana



November 1978
Calm 2.5%
(Total Hours 240)



December 1978
Calm 2.8%
(Total Hours 248)



January 1979

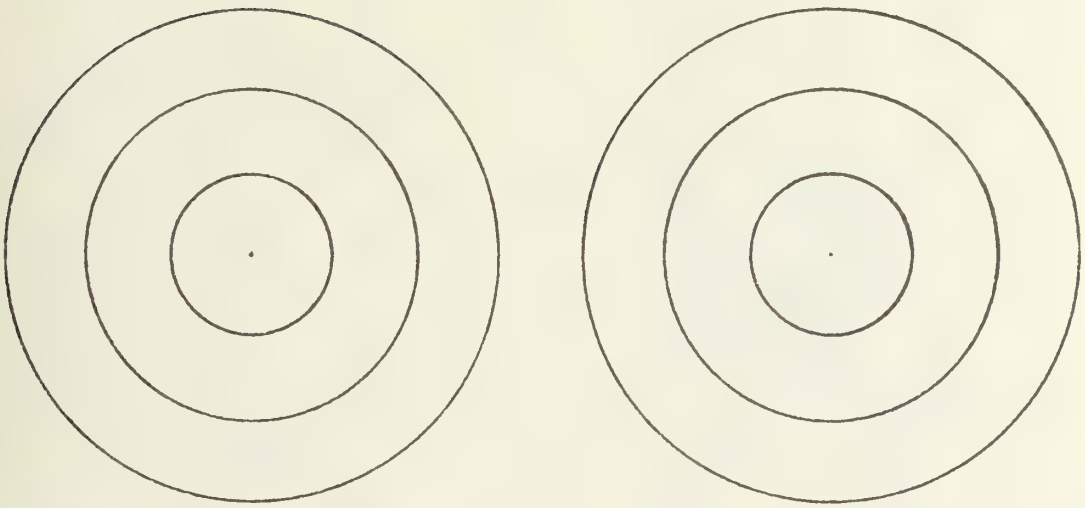
Calm 13.8%
(Total Hours 218)

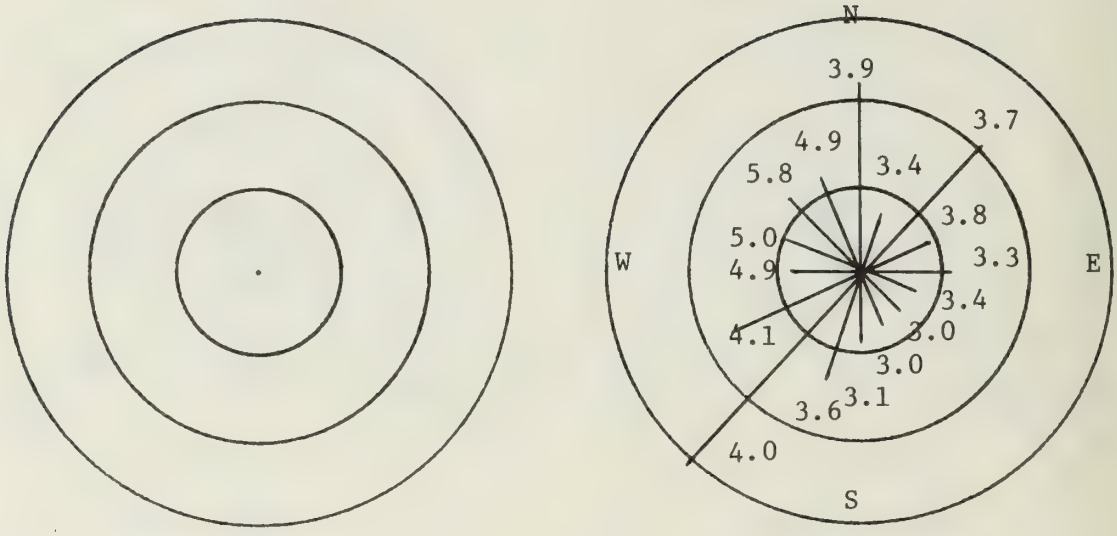
February 1979

Calm 16.7%
(Total Hours 192)

Figure

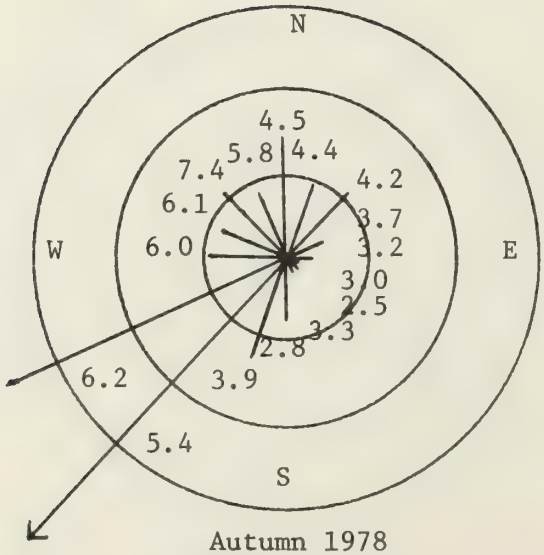
Monthly Wind Roses
National Weather Service
Billings, Montana





Summer 1978
Calm 2.8%
(Total Hours 722)

Figure
Seasonal Wind Roses
National Weather Service
Billings, Montana



Autumn 1978
Calm 2.1%
(Total Hours 712)

SITE - BILLINGS VO-TECH
1978-79

AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - MORNING

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
		4.17		0.77	1.88	1.66	2.61	1.38	1.16							

AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - MORNING

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
				-0.80		-1.86	-2.17	-0.98	-0.93							

PERCENT FREQUENCY OF SURFACE BASED FIRST INVERSIONS - MORNING

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
		30.0		16.6	28.5	33.3	12.4	14.2	11.6							

AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - AFTERNOON

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
		0.34	0.56	0.29	0.37	2.43	0.61	1.10	1.48							

AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - AFTERNOON

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
		-0.88	-0.76	-0.80	-0.55		-0.85	-0.84	-1.07							

PERCENT FREQUENCY OF SURFACED BASED FIRST INVERSIONS - AFTERNOON

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
		0.0	0.0	0.0	0.0	33.3	10.2	0.0	20.0							

Billings - Vo-Tech Site

Morning MIXING HEIGHTS - NUMBER OF OCCURRENCES
1978-1979

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100			2			2	1	1						2	2		
101-250			1		4	1		1	1	2				5	2		
251-500					1		2	1		1				1	3		
501-750									2	1					2		
751-1000					1			1	1					1	2		
1001-1500										1							
>1500									1						1		
Total			3		6	3	3	4	5	5				9	12		

Morning MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100			66.7			66.7	33.3	25.0						22.2	16.7		
101-250			33.3		66.7	33.3		25.0	20.0	40.0				55.6	16.7		
251-500					16.7		66.7	25.0		20.0				11.1	25.0		
501-750									40.0	20.0					16.7		
751-1000					16.7			25.0	20.0					11.1	16.7		
1001-1500										20.0							
>1500									20.0						8.3		
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)			2.8		6.4	4.9	12.1	7.6	7.5					5.9	8.7		

Billings - Vo-Tech Site

Afternoon MIXING HEIGHTS - NUMBER OF OCCURRENCES
1978-1979

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100																	
101-250			3	1	1			3	2	1				2	5		
251-500				1				3						1	3		
501-750						1				3				1			
751-1000				1										1			
1001-1500			1	1	1									2			
>1500			1		5					2				5			
Total			5	4	7	1		6	2	6				12	8		

Afternoon MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100																	
101-250			60.0	25.0	14.3			50.0	100.0	16.7				16.7	62.5		
251-500				25.0				50.0						8.3	37.5		
501-750						100.0				50.0				8.3			
751-1000				25.0										8.3			
1001-1500			20.0	25.0	14.3									16.7			
>1500			20.0		71.4					33.3				41.7			

AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)

			4.1	5.7	12.6	14.6		5.1	7.5	5.5				10.5	5.7		

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Billings Vo-Tech
MONTH OR SEASON: Autumn, 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100			5.3	15.8			10.5					31.6
101-250	10.5	10.5		10.5	10.5		5.3	5.3				52.6
251-500	10.5	5.3										15.8
501-750												0
total	21.1	15.8	5.3	26.3	10.5	0	15.8	5.3	0	0	0	100.0
No Inversion												0

Total No. of Occurrences 19

Inversion Type												
1	5.3			10.5	5.3		5.3					26.3
2	5.3	5.3	5.3	5.3	5.3		5.3	5.3				36.8
3	10.5	5.3	5.3	5.3			5.3					31.6
4				5.3								5.3
5												0

MONTH OR SEASON: Autumn 1978 AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100					12.5	12.5	6.3					31.3
101-250						6.3	18.8					25.0
251-500												0
501-750												0
Total												0
No Inversion												43.8

Total No. of Occurrences 9

Inversion Type												
1						33.3	33.3					66.7
2					11.1		11.1					22.2
3												0
4												0
5					11.1							11.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Billings Vo-Tech
MONTH OR SEASON: Winter 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	7.7			3.8	7.7	7.7	11.5	3.8				42.3
101-250	7.7	3.8	3.8	11.5	3.8		3.8					30.8
251-500	11.5		3.8									19.2
501-750	3.8	3.8										7.7
total	30.8	7.7	7.7	15.4	11.5	7.7	15.4	3.8	0	0	0	100.0
No Inversion												0

Total No. of Occurrences 26

Inversion Type												
1					3.8		7.7	3.8				15.4
2	11.5		3.8	7.7	7.7	7.7	7.7					46.2
3	15.4	3.8	3.8	7.7								30.8
4	3.8	3.8										7.7
5												0

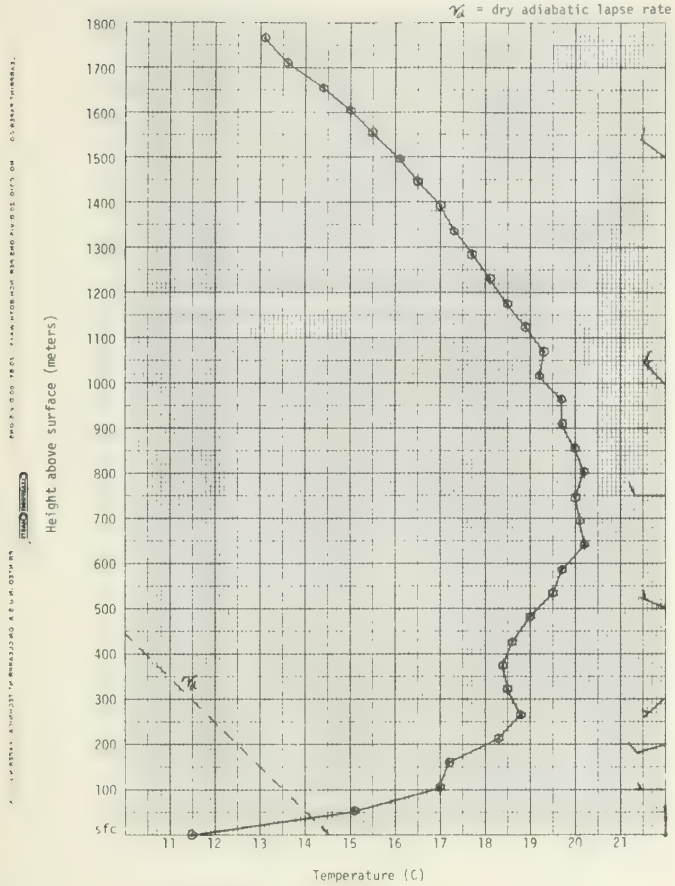
MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	2.9	2.9	2.9	14.3	11.4	8.6	8.6	8.6				60.0
101-250	11.4	2.9	8.6	5.7		2.9				2.9		34.3
251-500												0
501-750			2.9									2.9
Total	14.3	5.7	14.3	20.0	11.4	11.4	8.6	8.6	0	2.9	0	97.1
No Inversion												2.9

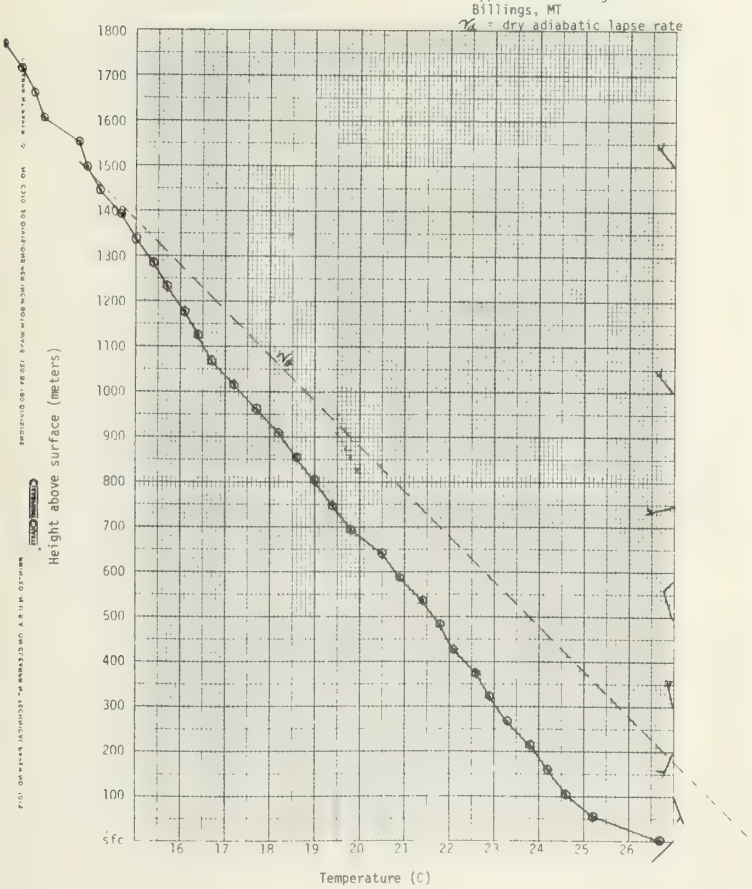
Total No. of Occurrences 34

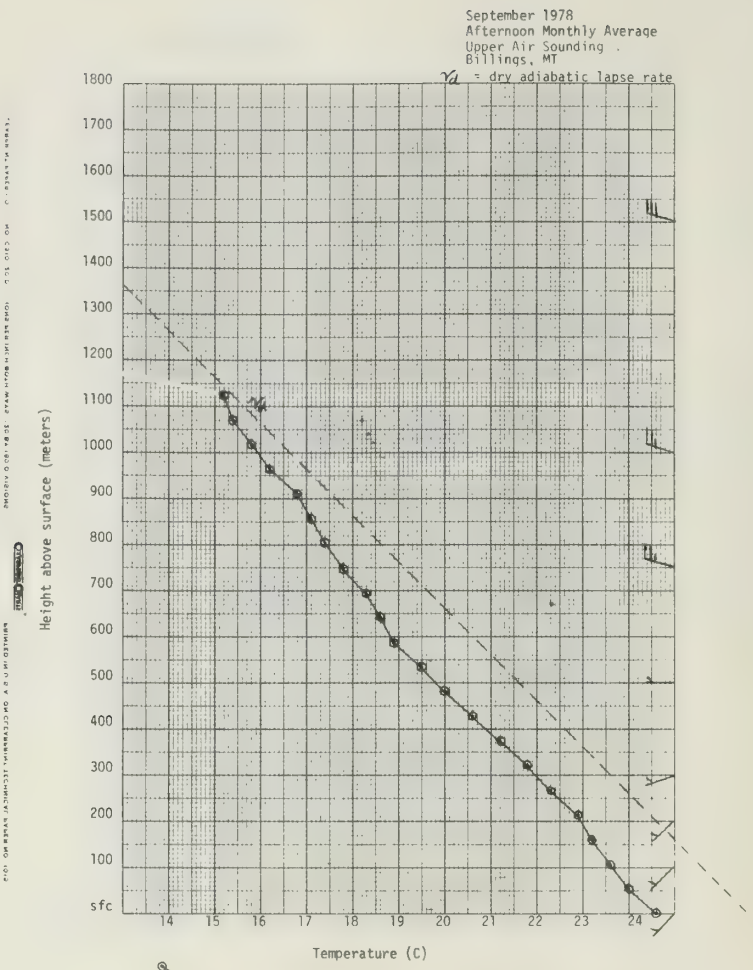
Inversion Type												
1	2.9	2.9	5.9	5.9	5.9	2.9	8.8	5.9		2.9		44.1
2	5.9	2.9		11.8	2.9	8.8		2.9				35.3
3	5.9		2.9	2.9	2.9							14.7
4			5.9									5.9
5												0

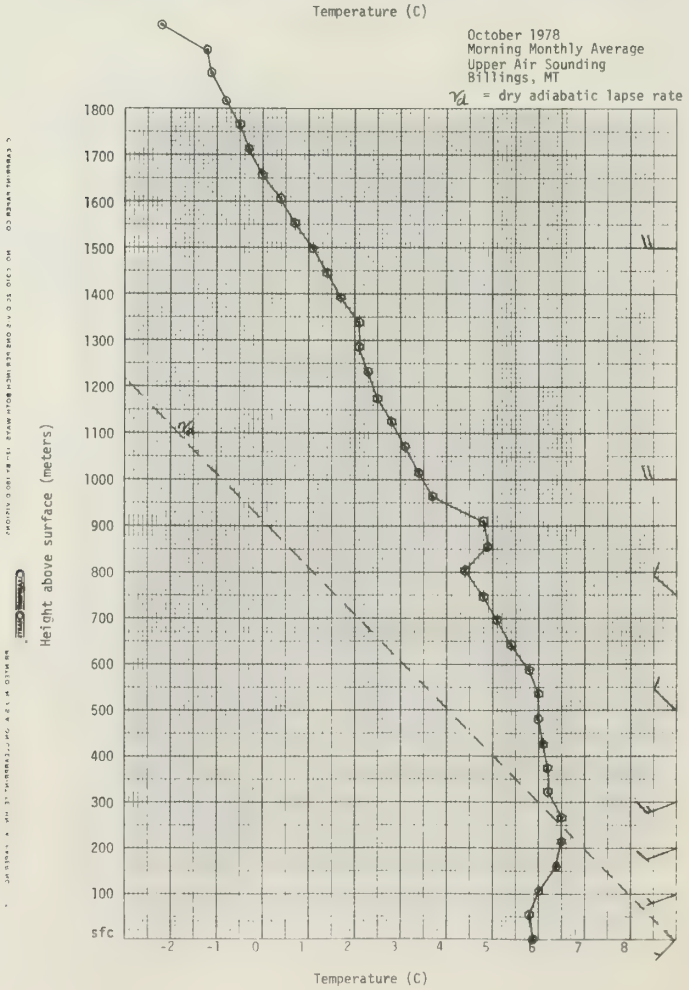
August 1978
Morning Monthly Average
Upper Air Soundings
Billings, MT
γ_d = dry adiabatic lapse rate

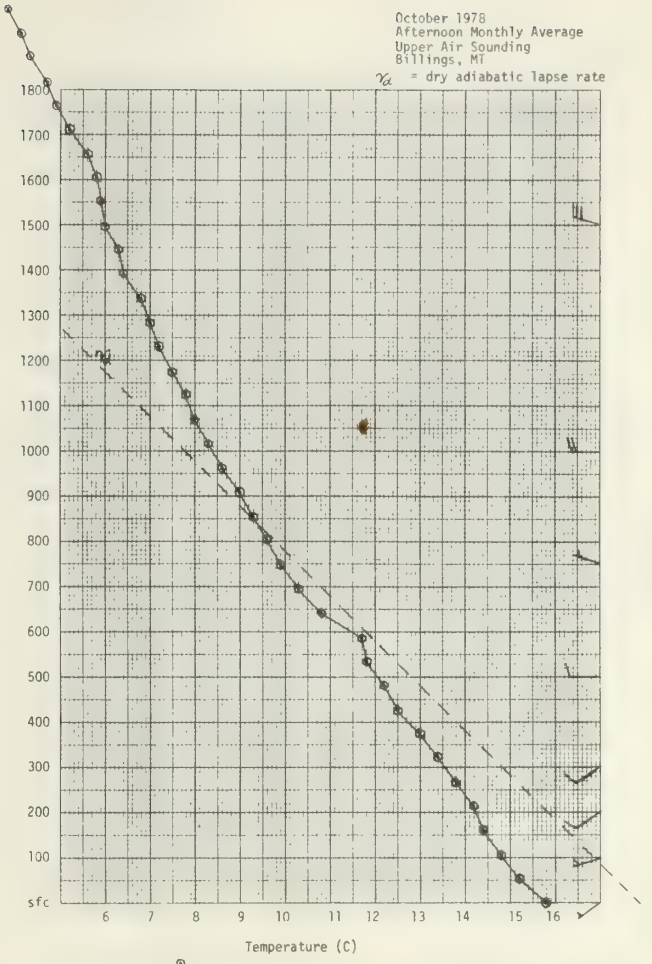


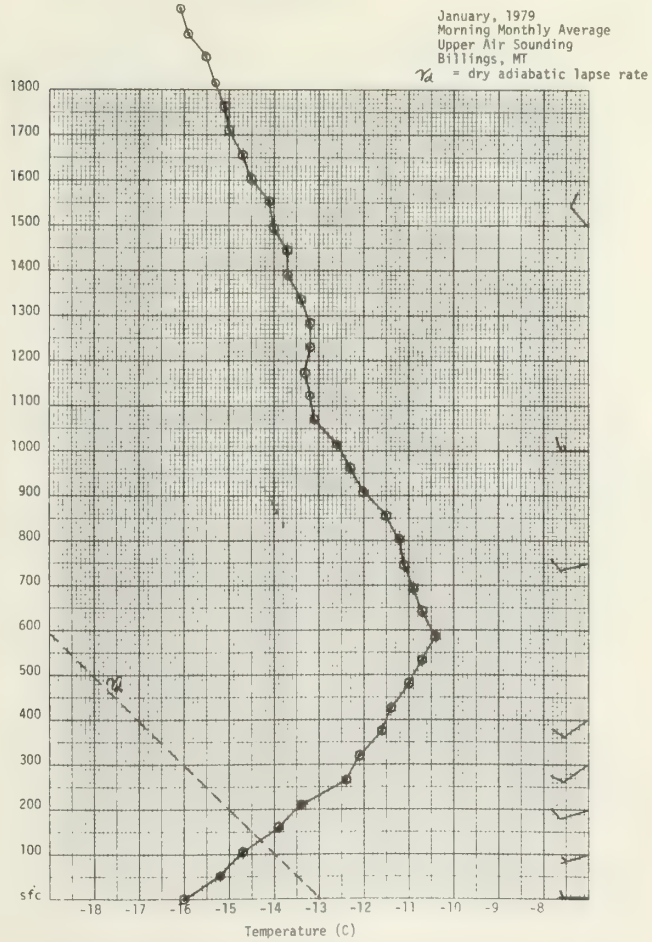
August 1978
Afternoon Monthly Average
Upper Air Sounding
Billings, MT
γ_d = dry adiabatic lapse rate

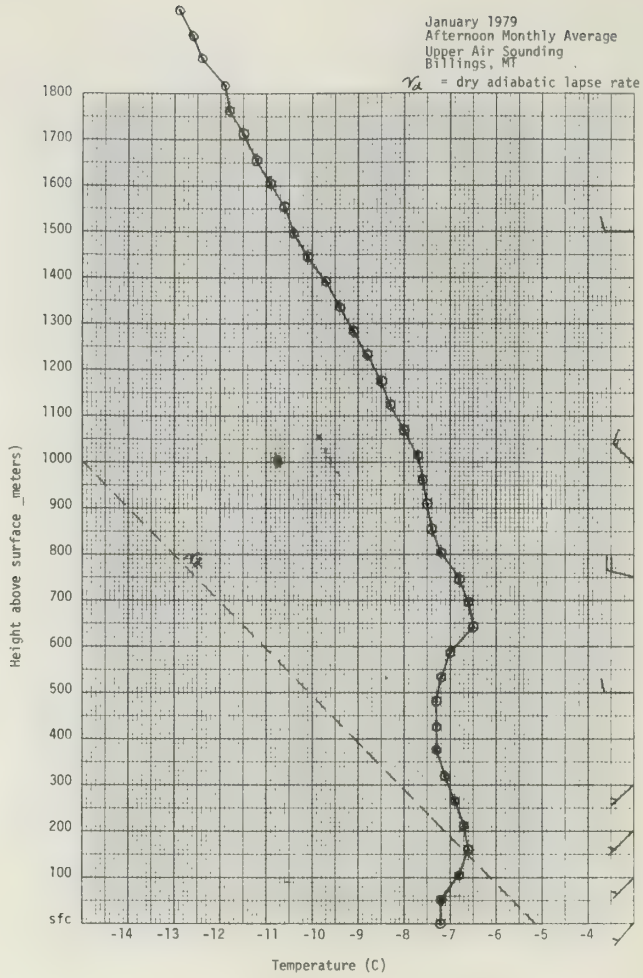


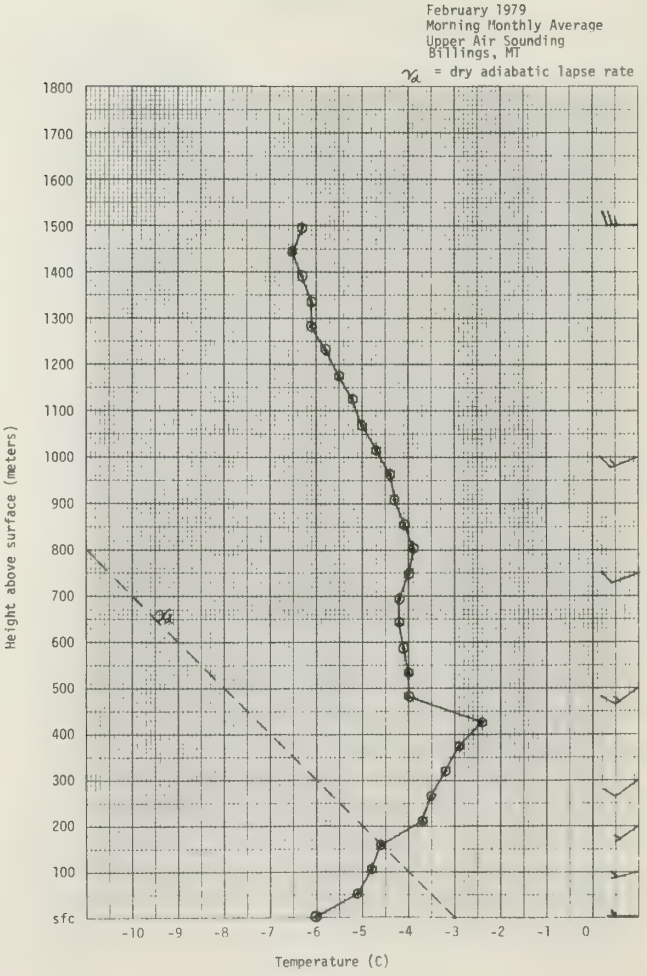

September 1978
Afternoon Monthly Average
Upper Air Sounding
Billings, MT
γ_d = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
14
15
16
17
18
19
20
21
22
23
24
Temperature (C)

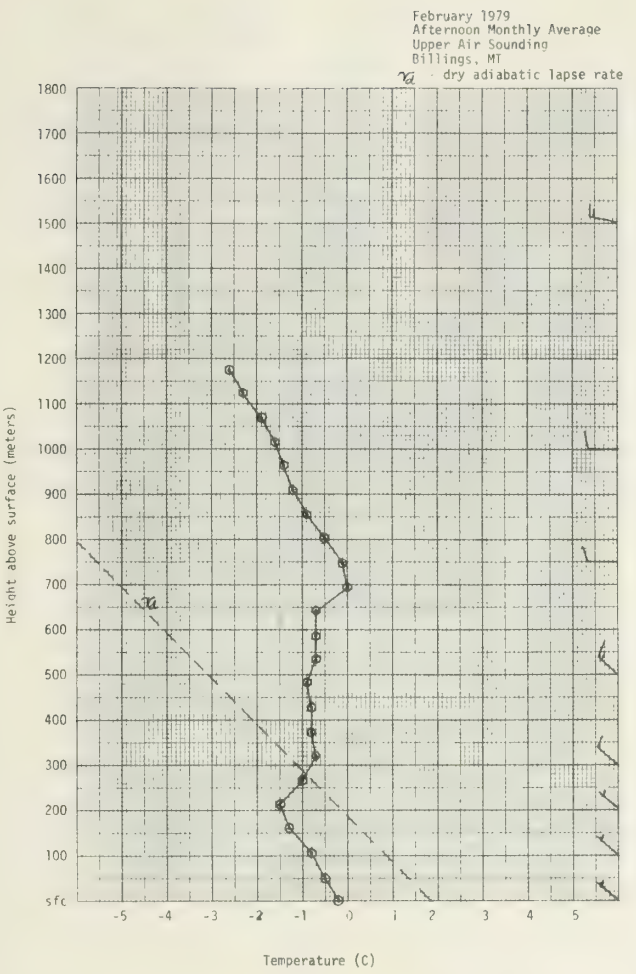

October 1978
Morning Monthly Average
Upper Air Sounding
Billings, MT
γ_d = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-2
-1
0
1
2
3
4
5
6
7
8
Temperature (C)

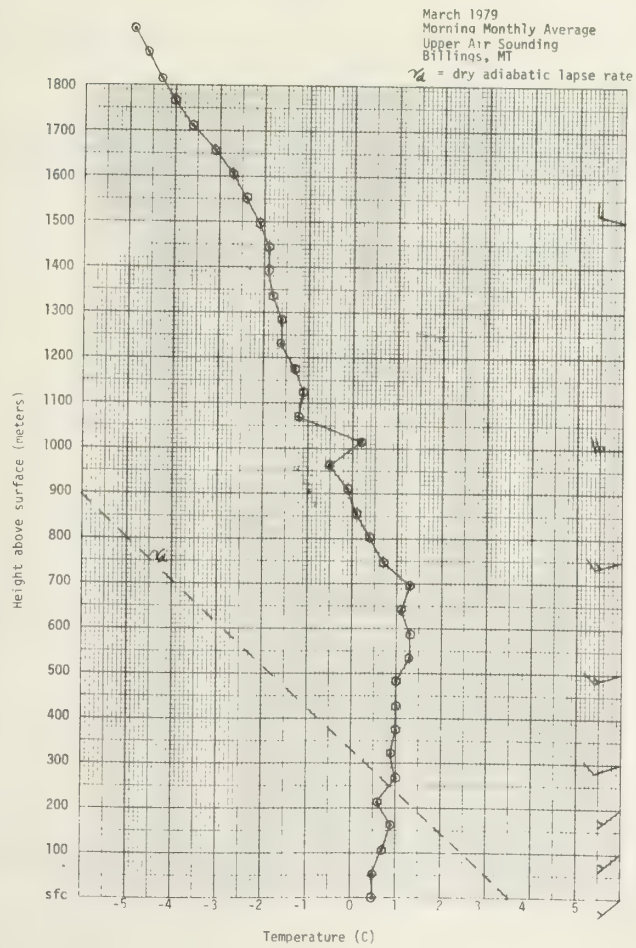

October 1978
Afternoon Monthly Average
Upper Air Sounding
Billings, MT
γ_d = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
6 7 8 9 10 11 12 13 14 15 16
Temperature (C)

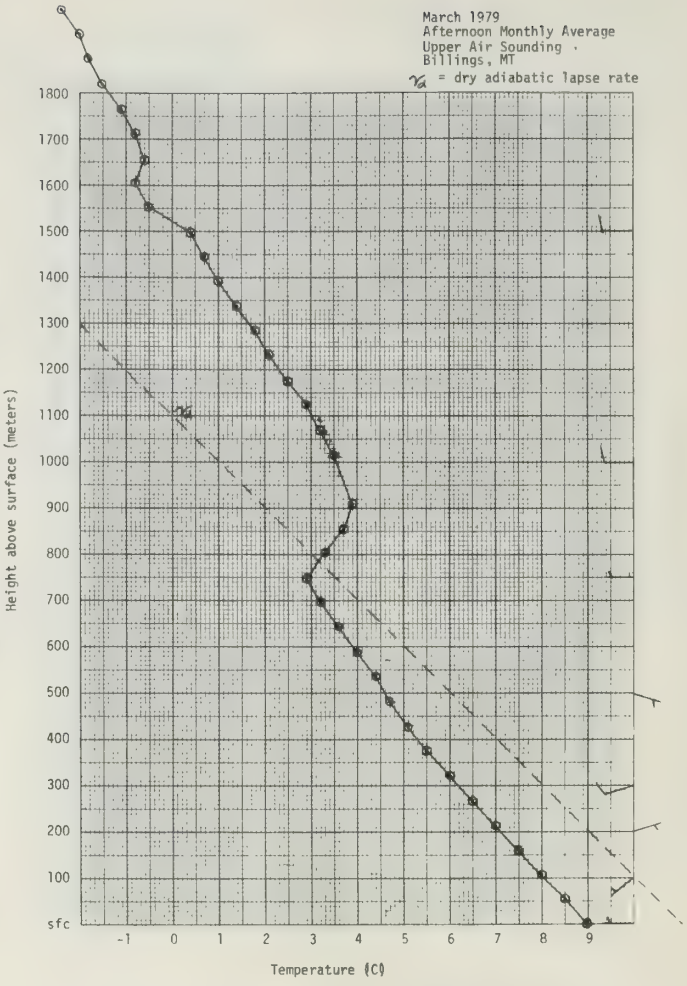

January, 1979
Morning Monthly Average
Upper Air Sounding
Billings, MT
γ_d = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8
Temperature (C)


January 1979
Afternoon Monthly Average
Upper Air Sounding
Billings, MT
γ_a = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4
Temperature (C)


February 1979
Morning Monthly Average
Upper Air Sounding
Billings, MT
γ_a = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0
Temperature (C)


February 1979
Afternoon Monthly Average
Upper Air Sounding
Billings, MT
γd = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-5 -4 -3 -2 -1 0 1 2 3 4 5
Temperature (C)


March 1979
Morning Monthly Average
Upper Air Sounding
Billings, MT
γd = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-5 -4 -3 -2 -1 0 1 2 3 4 5
Temperature (C)


March 1979
Afternoon Monthly Average
Upper Air Sounding
Billings, MT
γ_d = dry adiabatic lapse rate
Height above surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-1
0
1
2
3
4
5
6
7
8
9
Temperature (C)

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	40.0						2	40.0	.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	20.0						1	20.0	.9
SSE							0	0.0	
S							0	0.0	
SSW	20.0						1	20.0	.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	20.0	
COL. TOTALS	80.0						5		.6

SURFACE WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	25.0						1	25.0	2.2
ENE							0	0.0	
E	25.0						1	25.0	1.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	25.0						1	25.0	.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		25.0					1	25.0	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	75.0	25.0					4		1.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		20.0					1	20.0	3.5
NNE							0	0.0	
NE		20.0					1	20.0	3.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	20.0						1	20.0	2.3
SW			20.0				1	20.0	6.0
WSW	20.0						1	20.0	2.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	40.0	20.0				5		3.6

100 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		25.0					1	25.0	3.9
NE	25.0						1	25.0	2.8
ENE	25.0						1	25.0	2.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	25.0						1	25.0	2.4
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	75.0	25.0					4		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		20.0					1	20.0	4.9
NNE							0	0.0	
NE		20.0					1	20.0	3.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	20.0						1	20.0	2.1
W							0	0.0	
WNW							0	0.0	
NW	40.0						2	40.0	1.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0	40.0					5		2.6

200 METER LEVEL WINDS AFTERNCON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			25.0				1	25.0	7.7
NE							0	0.0	
ENE	25.0	25.0					2	50.0	4.2
E							0	0.0	
ESE							0	0.0	
SE	25.0						1	25.0	1.7
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0	25.0				4		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		20.0	20.0				2	40.0	5.1
NNE		20.0					1	20.0	4.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	20.0						1	20.0	1.7
NW	20.0						1	20.0	2.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	40.0	20.0				5		3.6

300 METER LEVEL WINDS AFTERNCON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			25.0				1	25.0	7.8
ENE	25.0	25.0					2	50.0	2.7
E							0	0.0	
ESE							0	0.0	
SE	25.0						1	25.0	1.7
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0	25.0				4		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		20.0	20.0				2	40.0	6.3
NNE		20.0					1	20.0	5.2
NE		20.0					1	20.0	3.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	20.0						1	20.0	1.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	60.0	20.0				5		4.5

500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		25.0					1	25.0	5.8
ENE	25.0	25.0					2	50.0	2.8
E	25.0						1	25.0	2.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					4		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		40.0					2	40.0	4.1
NE			20.0				1	20.0	7.2
ENE		20.0					1	20.0	4.9
E	20.0						1	20.0	1.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	60.0	20.0				5		4.4

750 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		25.0					1	25.0	4.6
E		50.0					2	50.0	3.6
ESE	25.0						1	25.0	2.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	75.0					4		3.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		25.0					1	25.0	4.2
ENE			25.0				1	25.0	7.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	25.0						1	25.0	2.2
WNW	25.0						1	25.0	1.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0	25.0				4		3.9

1500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	33.3						1	33.3	1.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	33.3						1	33.3	2.4
SW							0	0.0	
WSW							0	0.0	
W		33.3					1	33.3	4.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	33.3					3		2.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	25.0						1	25.0	1.7
ENE	25.0	50.0					3	75.0	4.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					4		3.6

1000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		33.3					1	33.3	5.6
SE	33.3						1	33.3	2.2
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	33.3						1	33.3	2.3
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	33.3					3		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		33.3					1	33.3	5.5
ENE	33.3						1	33.3	2.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		33.3					1	33.3	4.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	66.6					3		4.3

2000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	50.0						1	50.0	1.8
WSW							0	0.0	
W							0	0.0	
WNW		50.0					1	50.0	3.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		2.5

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JULY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	27.2						3	27.2	.6
NNE							0	C.0	
NE	9.0						1	9.0	.9
ENE							0	0.0	
E							0	C.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0	9.0					2	18.0	1.8
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							5	45.0	
COL. TOTALS	45.2	9.0					11		.5

SURFACE WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3	8.3					2	16.6	2.0
NNE	8.3						1	8.3	2.7
NE	8.3						1	8.3	1.8
ENE							0	0.0	
E		8.3					1	8.3	3.1
ESE							0	0.0	
SE	8.3						1	8.3	.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						3	25.0	1.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		8.3					1	8.3	3.6
NNW			8.3				1	8.3	8.5
CALM							1	8.0	
COL. TOTALS	58.2	24.9	8.3				12		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	C.0	
NNE	9.0						1	9.0	1.3
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.9
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	.3
S							0	0.0	
SSW	9.0						1	9.0	1.2
SW			9.0				1	9.0	6.3
WSW		9.0	9.0				2	18.0	5.5
W	9.0	18.1					3	27.1	2.8
WNW	9.0						1	9.0	.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.0	36.1	18.0				11		3.0

100 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.1
NNE							0	0.0	
NE			8.3				1	8.3	6.2
ENE	8.3						1	8.3	2.6
E							0	0.0	
ESE				8.3			1	8.3	13.9
SE							0	0.0	
SSE	8.3	8.3					2	16.6	2.7
S							0	0.0	
SSW							0	0.0	
SW					8.3		1	8.3	20.0
WSW	8.3						1	8.3	2.7
W	8.3						1	8.3	1.3
WNW			8.3				1	8.3	9.3
NW			8.3				1	8.3	9.6
NNW	8.3						1	8.3	.9
CALM							0	C.0	
COL. TOTALS	41.5	16.6	24.9	8.3	8.3		12		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.3
NNE		9.0					1	9.0	3.6
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	18.1						2	18.1	1.7
SW			9.0				1	9.0	6.4
WSW		18.1	9.0	9.0			4	36.1	7.5
W							0	0.0	
WNW		9.0					1	9.0	5.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.1	45.1	18.0	9.0			11		5.0

200 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.0
NNE							0	0.0	
NE		8.3	8.3				2	16.6	6.0
ENE							0	0.0	
E							0	0.0	
ESE				8.3			1	8.3	10.6
SE							0	0.0	
SSE		8.3					1	8.3	4.4
S							0	0.0	
SSW	8.3			8.3			2	16.6	5.7
SW		8.3					1	8.3	3.0
WSW		8.3					1	8.3	3.5
W	8.3						1	8.3	2.8
WNW							0	0.0	
NW							0	0.0	
NNW		8.3		8.3			2	16.6	7.3
CALM							0	0.0	
COL. TOTALS	24.9	41.5	8.3	24.9			12		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		10.0					1	10.0	5.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	1.9
SSW							0	0.0	
SW	10.0	10.0	10.0				3	30.0	4.2
WSW			20.0				2	20.0	8.6
W							0	0.0	
WNW		20.0					2	20.0	4.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	40.0	30.0				10		4.9

300 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.3
NE		8.3	8.3				2	16.6	6.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.5
SSE							0	0.0	
S		8.3					1	8.3	3.1
SSW				8.3			1	8.3	12.6
SW	8.3						1	8.3	2.7
WSW		8.3					1	8.3	4.6
W		8.3					1	8.3	4.2
WNW				8.3			1	8.3	14.6
NW							0	0.0	
NNW	8.3			8.3			2	16.6	6.4
CALM							0	0.0	
COL. TOTALS	33.2	33.2	8.3	24.9			12		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		10.0					1	10.0	3.7
NE							0	0.0	
ENE							0	0.0	
E			10.0				1	10.0	8.4
ESE							0	0.0	
SE	10.0						1	10.0	1.5
SSE							0	0.0	
S	10.0						1	10.0	1.3
SSW							0	0.0	
SW			10.0				1	10.0	9.6
WSW				10.0			1	10.0	10.3
W			10.0				1	10.0	8.6
WNW		10.0	10.0				2	20.0	6.4
NW				10.0			1	10.0	10.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	40.0	20.0			10		6.7

500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.7
NE			8.3				1	8.3	9.5
ENE				8.3			1	8.3	10.3
E	8.3						1	8.3	2.0
ESE							0	0.0	
SE							0	0.0	
SSE		16.6					2	16.6	4.1
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	1.8
WSW		8.3					1	8.3	4.8
W					8.3		1	8.3	16.1
WNW							0	0.0	
NW							0	0.0	
NNW		8.3	8.3	8.3			3	24.9	8.7
CALM							0	0.0	
COL. TOTALS	24.9	33.2	16.6	16.6	8.3		12		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			10.0				1	10.0	7.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		10.0					1	10.0	5.7
SE							0	0.0	
SSE							0	0.0	
S		10.0					1	10.0	4.5
SSW			10.0	10.0			2	20.0	11.2
SW							0	0.0	
WSW							0	0.0	
W		10.0		10.0			2	20.0	9.5
WNW							0	0.0	
NW			10.0	10.0			2	20.0	10.8
NNW			10.0				1	10.0	8.1
CALM							0	0.0	
COL. TOTALS		30.0	40.0	30.0			10		8.8

750 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		8.3					1	8.3	3.4
E	8.3		16.6				3	24.9	5.8
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.7
S							0	0.0	
SSW	8.3	8.3					2	16.6	3.0
SW							0	0.0	
WSW	8.3	8.3	8.3				3	24.9	4.9
W							0	0.0	
WNW							0	0.0	
NW			8.3				1	8.3	6.7
NNW	8.3						1	8.3	2.7
CALM							0	0.0	
COL. TOTALS	41.5	24.9	33.2				12		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		11.1					1	11.1	3.6
ESE							0	0.0	
SE		11.1					1	11.1	5.3
SSE							0	0.0	
S							0	0.0	
SSW				11.1			1	11.1	10.8
SW					11.1		1	11.1	16.7
WSW							0	0.0	
W					11.1		1	11.1	18.6
WNW			11.1				1	11.1	9.8
NW				11.1	11.1		2	22.2	13.5
NNW		11.1					1	11.1	4.7
CALM							0	0.0	
COL. TOTALS		33.3	11.1	22.2	33.3		9		10.7

1000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0		9.0			2	18.0	7.5
ESE			9.0				1	9.0	8.2
SE		9.0					1	9.0	3.3
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			9.0				1	9.0	8.0
W	9.0						1	9.0	2.5
WNW							0	0.0	
NW	9.0	9.0	9.0				3	27.0	4.1
NNW	9.0						1	9.0	1.1
CALM							0	0.0	
COL. TOTALS	27.0	36.0	27.0	9.0			11		4.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	2.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	11.1						1	11.1	2.1
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	2.6
W	11.1		11.1	11.1			3	33.3	7.6
WNW							0	0.0	
NW		11.1	11.1	11.1			3	33.3	9.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	11.1	22.2	22.2			9		6.3

1500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	3.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	1.2
SE							0	0.0	
SSE			10.0				1	10.0	6.2
S		10.0					1	10.0	4.2
SSW	10.0		10.0				2	20.0	3.8
SW							0	0.0	
WSW			10.0				1	10.0	7.3
W							0	0.0	
WNW							0	0.0	
NW		20.0	10.0				3	30.0	5.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0	40.0				10		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	1.9
S							0	0.0	
SSW							0	0.0	
SW			11.1				1	11.1	8.8
WSW	11.1	11.1	11.1				3	33.3	4.4
W		11.1					1	11.1	5.1
WNW			11.1	11.1	11.1		3	33.3	13.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	22.2	33.3	11.1	11.1		9		7.8

2000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					1	11.1	3.7
S							0	0.0	
SSW		11.1					1	11.1	4.9
SW		11.1	11.1	11.1			3	33.3	7.2
WSW			11.1				1	11.1	9.7
W							0	0.0	
WNW			11.1	11.1			2	22.2	8.8
NW			11.1				1	11.1	7.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	44.4	22.2			9		7.2

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF AUGUST 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100					20.0	10.0	10.0					40.0
101-250	20.0			20.0	10.0							50.0
251-500	10.0											10.0
501-750												
TOTAL	30.0			20.0	30.0	10.0	10.0					
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				10
INVERSION TYPE												
1					10.0	10.0						20.0
2	10.0			10.0	20.0		10.0					50.0
3				10.0								10.0
4	20.0											20.0
5												

MONTH OF AUGUST 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				16.6			50.0	16.6				83.2
101-250												
251-500												
501-750												
TOTAL				16.6			50.0	16.6				
NO INVERSION												16.0
								TOTAL NO. OF OCCURENCES				5
INVERSION TYPE												
1				20.0			20.0	20.0				60.0
2							40.0					40.0
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR AUGUST 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	1	3
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	1
>1500	0	1
TOTAL	3	5
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.8	4.1
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.88

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	50.0						1	50.0	.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	50.0	
COL. TOTALS	50.0						2		.4

SURFACE WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		16.6					1	16.6	4.5
SSE							0	0.0	
S							0	0.0	
SSW		16.6					1	16.6	3.6
SW	16.6	16.6					2	33.2	2.4
WSW							0	0.0	
W	16.6						1	16.6	1.8
WNW							0	0.0	
NW	16.6						1	16.6	.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	49.8					6		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	50.0	50.0					2	100.0	2.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		2.4

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	16.6		33.3				3	49.9	5.4
WSW							0	0.0	
W	16.6						1	16.6	1.5
WNW			16.6				1	16.6	8.4
NW							0	0.0	
NNW	16.6						1	16.6	2.5
CALM							0	0.0	
COL. TOTALS	49.8		49.9				6		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		50.0	50.0				2	100.0	6.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	50.0				2		6.1

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	16.6	16.6					2	33.2	3.3
WSW			16.6				1	16.6	9.2
W		16.6					1	16.6	4.4
WNW			16.6				1	16.6	9.2
NW							0	0.0	
NNW	16.6						1	16.6	2.7
CALM							0	0.0	
COL. TOTALS	33.2	33.2	33.2				6		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		50.0					1	50.0	4.8
W				50.0			1	50.0	11.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0		50.0			2		7.9

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			16.6				1	16.6	6.7
SW	16.6						1	16.6	2.8
WSW		16.6	16.6				2	33.2	5.7
W							0	0.0	
WNW				16.6			1	16.6	12.0
NW							0	0.0	
NNW		16.6					1	16.6	3.4
CALM							0	0.0	
COL. TOTALS	16.6	33.2	33.2	16.6			6		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				50.0			1	50.0	14.6
WSW				50.0			1	50.0	10.7
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			2		12.6

500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		16.6					1	16.6	5.1
SW		16.6					1	16.6	3.1
WSW							0	0.0	
W			16.6	16.6			2	33.2	5.1
WNW	16.6				16.6		2	33.2	12.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	49.8	16.6		16.6		6		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					50.0		1	50.0	18.7
WSW				50.0			1	50.0	10.0
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				50.0	50.0		2		14.3

750 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			16.6				1	16.6	7.0
SW			16.6				1	16.6	6.4
WSW							0	0.0	
W		16.6					1	16.6	3.5
WNW		16.6	16.6			16.6	3	49.8	27.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.2	49.8			16.6	6		16.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					50.0		1	50.0	18.4
WSW							0	0.0	
W							0	0.0	
WNW		50.0					1	50.0	5.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0			50.0		2		11.7

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		16.6					1	16.6	4.9
SW			33.3				2	33.3	7.4
WSW							0	0.0	
W							0	0.0	
WNW			16.6	16.6		16.6	3	49.8	27.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	49.9	16.6		16.6	6		17.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			50.0				1	50.0	8.1
W							0	0.0	
WNW							0	0.0	
NW		50.0					1	50.0	4.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	50.0				2		6.3

1500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			16.6	16.6			2	33.2	9.3
SW							0	0.0	
WSW							0	0.0	
W		16.6	16.6				2	33.2	4.8
WNW					16.6	16.6	2	33.2	54.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	33.2	16.6	16.6	16.6	6		22.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	50.0						1	50.0	2.8
W							0	0.0	
WNW							0	0.0	
NW			50.0				1	50.0	6.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0		50.0				2		4.8

2000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	20.0						1	20.0	2.6
S							0	0.0	
SSW							0	0.0	
SW			20.0				1	20.0	8.9
WSW				40.0			2	40.0	11.5
W			20.0				1	20.0	8.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		40.0	40.0			5		8.6

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF SEPTEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100					25.0							25.0
101-250												
251-500												
501-750												
TOTAL					25.0							
NO INVERSION												75.0
											TOTAL NO. OF OCCURENCES	1
INVERSION TYPE												
1												
2					100.0							100.0
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR SEPTEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	1
251- 500	0	1
501- 750	0	0
751-1000	0	1
1001-1500	0	1
>1500	0	0
TOTAL	0	4
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	5.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.76

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0	9.0					2	18.0	2.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0			9.0			2	18.0	7.1
SSW							0	0.0	
SW	36.3			9.0			5	45.3	3.6
WSW							0	0.0	
W	9.0						1	9.0	2.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	9.0	
COL. TOTALS	63.3	9.0		18.0			11		3.6

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		20.0					2	20.0	4.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	20.0						2	20.0	1.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	1.3
SSW							0	0.0	
SW	10.0			10.0			2	20.0	6.2
WSW							0	0.0	
W			20.0				2	20.0	6.7
WNW							0	0.0	
NW			10.0				1	10.0	6.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	20.0	30.0	10.0			10		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	2.5
S							0	0.0	
SSW	9.0						1	9.0	1.6
SW	9.0		9.0				2	18.0	5.0
WSW	9.0	18.1	9.0	9.0			5	45.1	7.1
W							0	0.0	
WNW		9.0					1	9.0	4.5
NW			9.0				1	9.0	7.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.0	27.1	27.0	9.0			11		5.6

100 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0	10.0				2	20.0	5.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0	10.0					2	20.0	2.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					10.0		1	10.0	18.2
WSW		10.0	20.0				3	30.0	5.8
W		10.0					1	10.0	5.1
WNW							0	0.0	
NW			10.0				1	10.0	8.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	40.0	40.0		10.0		10		6.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	1.2
SSW							0	0.0	
SW					9.0		1	9.0	20.5
WSW			18.1	27.2			5	45.3	10.7
W							0	0.0	
WNW		9.0					1	9.0	4.9
NW			9.0	9.0			2	18.0	10.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	9.0	27.1	36.2	9.0		11		9.3

200 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				10.0			1	10.0	11.2
NE							0	0.0	
ENE		10.0					1	10.0	4.0
E	10.0						1	10.0	1.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	10.0				10.0		2	20.0	9.8
WSW			10.0				1	10.0	6.3
W		10.0	10.0				2	20.0	6.2
WNW							0	0.0	
NW			10.0				1	10.0	8.8
NNW		10.0					1	10.0	5.4
CALM							0	0.0	
COL. TOTALS	20.0	30.0	30.0	10.0	10.0		10		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		9.0					1	9.0	4.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				18.1			2	18.1	13.4
WSW			18.1		9.0		3	27.1	13.1
W			9.0				1	9.0	6.2
WNW							0	0.0	
NW			18.1		9.0		3	27.1	10.8
NNW		9.0					1	9.0	3.5
CALM							0	0.0	
COL. TOTALS		18.0	45.2	18.1	18.0		11		10.2

300 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	4.3
NNE					10.0		1	10.0	23.5
NE							0	0.0	
ENE		10.0					1	10.0	3.9
E							0	0.0	
ESE	10.0						1	10.0	1.1
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	1.0
SSW							0	0.0	
SW			10.0		10.0		2	20.0	12.2
WSW							0	0.0	
W			20.0				2	20.0	7.7
WNW							0	0.0	
NW							0	0.0	
NNW			10.0				1	10.0	8.9
CALM							0	0.0	
COL. TOTALS	20.0	20.0	40.0		20.0		10		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	5.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	2.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				9.0	9.0		2	18.0	18.8
WSW				9.0	9.0		2	18.0	16.3
W			9.0	9.0			2	18.0	10.2
WNW							0	0.0	
NW			9.0	18.1			3	27.1	11.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	9.0	18.0	45.1	18.0		11		12.0

500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				10.0			1	10.0	12.7
NNE							0	0.0	
NE	10.0	10.0					2	20.0	2.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	10.0			10.0			2	20.0	7.2
WSW			10.0				1	10.0	8.0
W			10.0	10.0			2	20.0	9.7
WNW							0	0.0	
NW		10.0		10.0			2	20.0	7.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	20.0	40.0			10		7.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		10.0					1	10.0	3.3
SSW							0	0.0	
SW				10.0			1	10.0	11.4
WSW				10.0	10.0		2	20.0	16.2
W					20.0		2	20.0	17.8
WNW							0	0.0	
NW			10.0	20.0			3	30.0	10.9
NNW				10.0			1	10.0	13.0
CALM							0	0.0	
COL. TOTALS		10.0	10.0	50.0	30.0		10		12.8

750 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	3.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			10.0				1	10.0	9.3
WSW	10.0			10.0			2	20.0	5.9
W					10.0		1	10.0	18.2
WNW	10.0		10.0				2	20.0	6.0
NW				10.0			1	10.0	15.9
NNW		20.0					2	20.0	4.7
CALM							0	0.0	
COL. TOTALS	20.0	30.0	20.0	20.0	10.0		10		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1		11.1			2	22.2	9.2
W			11.1		33.3		4	44.4	18.8
WNW				11.1			1	11.1	13.3
NW					11.1		1	11.1	17.3
NNW			11.1				1	11.1	9.0
CALM							0	0.0	
COL. TOTALS		11.1	22.2	22.2	44.4		9		14.8

1000 METER LEVEL WINDS AFTERNCON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0			
N		11.1					1	11.1	3.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	11.1		11.1				2	22.2	4.5
SW							0	0.0	
WSW							0	0.0	
W			11.1		11.1	11.1	3	33.3	19.7
WNW				11.1			1	11.1	11.7
NW				11.1			1	11.1	15.2
NNW				11.1			1	11.1	10.5
CALM							0	0.0	
COL. TOTALS	11.1	11.1	22.2	33.3	11.1	11.1	9		12.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					12.5		1	12.5	20.1
W				12.5	12.5	12.5	3	37.5	21.1
WNW				12.5			1	12.5	15.8
NW			12.5	25.0			3	37.5	11.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			12.5	50.0	25.0	12.5	8		16.8

1500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE			11.1				1	11.1	6.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				11.1			1	11.1	13.1
SW							0	0.0	
WSW			11.1				1	11.1	9.8
W						22.2	2	22.2	29.2
WNW				22.2			2	22.2	12.0
NW				22.2			2	22.2	10.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			22.2	55.5		22.2	9		14.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					14.2		1	14.2	20.4
W			14.2				1	14.2	6.8
WNW			14.2	14.2	14.2		3	42.6	15.3
NW				14.2	14.2		2	28.4	15.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			28.4	28.4	42.6		7		14.8

2000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		11.1					1	11.1	5.7
WSW							0	0.0	
W				11.1	11.1		2	22.2	19.9
WNW				22.2	11.1	11.1	4	44.4	18.9
NW				11.1	11.1		2	22.2	15.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		11.1		44.4	33.3	11.1	9		16.8

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF OCTOBER 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			8.3	8.3			8.3					24.9
101-250	16.6	8.3		16.6	8.3		8.3	8.3				66.4
251-500			8.3									8.3
501-750												
TOTAL	16.6	8.3	16.6	24.9	8.3		16.6	8.3				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				12

INVERSION TYPE												
1	8.3			8.3	8.3							24.9
2	8.3	8.3	8.3	8.3			8.3	8.3				49.8
3			8.3	8.3			8.3					24.9
4												
5												

MONTH OF OCTOBER 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100					10.0	20.0						30.0
101-250						10.0	30.0					40.0
251-500												
501-750												
TOTAL					10.0	30.0	30.0					
NO INVERSION												30.0
								TOTAL NO. OF OCCURENCES				7

INVERSION TYPE												
1						42.8	28.5					71.3
2							14.2					14.2
3												
4												
5					14.2							14.2

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR OCTOBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	4	1
251- 500	1	0
501- 750	0	0
751-1000	1	0
1001-1500	0	1
>1500	0	5
TOTAL	6	7
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	6.4	12.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.80	-00.80

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	20.0						1	20.0	.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	20.0						1	20.0	.9
SSW							0	0.0	
SW	40.0	20.0					3	60.0	3.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	80.0	20.0					5		2.4

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		33.3					1	33.3	5.4
WSW							0	0.0	
W				33.3			1	33.3	11.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	33.0	
COL. TOTALS		33.3		33.3			3		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	20.0						1	20.0	1.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	20.0		40.0				3	60.0	6.5
WSW		20.0					1	20.0	4.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	20.0	40.0				5		5.2

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				33.3			1	33.3	10.1
WSW							0	0.0	
W							0	0.0	
WNW	33.3			33.3			2	66.6	5.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3			66.6			3		7.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	20.0						1	20.0	1.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			20.0				1	20.0	8.7
SW		20.0					1	20.0	4.8
WSW				40.0			2	40.0	12.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	20.0	40.0			5		7.9

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	33.3						1	33.3	.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			33.3				1	33.3	7.3
WSW							0	0.0	
W				33.3			1	33.3	14.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		33.3	33.3			3		7.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	20.0						1	20.0	2.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				20.0			1	20.0	11.1
SW			20.0				1	20.0	7.9
WSW				20.0			1	20.0	12.0
W	20.0						1	20.0	2.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0		20.0	40.0			5		7.1

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	33.3						1	33.3	1.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			33.3				1	33.3	8.1
WSW							0	0.0	
W							0	0.0	
WNW					33.3		1	33.3	24.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		33.3		33.3		3		11.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	20.0						1	20.0	1.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW					20.0		1	20.0	18.6
SW		20.0			20.0		2	40.0	11.1
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		20.0					1	20.0	5.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0			40.0		5		9.5

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	33.3						1	33.3	2.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				33.3			1	33.3	13.5
W							0	0.0	
WNW						33.3	1	33.3	25.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3			33.3		33.3	3		13.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	20.0						1	20.0	1.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					20.0		1	20.0	18.8
WSW				20.0	20.0		2	40.0	16.1
W							0	0.0	
WNW							0	0.0	
NW			20.0				1	20.0	6.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		20.0	20.0	40.0		5		11.8

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		33.3					1	33.3	3.0
SSW							0	0.0	
SW							0	0.0	
WSW					33.3		1	33.3	18.2
W							0	0.0	
WNW					33.3		1	33.3	19.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3			66.6		3		13.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	14.8
WSW						25.0	1	25.0	29.6
W					25.0		1	25.0	21.9
WNW							0	0.0	
NW			25.0				1	25.0	9.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			25.0	25.0	25.0	25.0	4		18.9

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		33.3					1	33.3	4.6
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					33.3		1	33.3	17.1
WNW					33.3		1	33.3	19.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3			66.6		3		13.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW				66.6		33.3	1	33.3	36.3
NNW							2	66.6	11.0
CALM							0	0.0	
							0	0.0	
COL. TOTALS				66.6		33.3	3		19.4

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			50.0		50.0		2	100.0	12.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			50.0		50.0		2		12.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				50.0	50.0		2	100.0	17.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				50.0	50.0		2		17.5

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				50.0			1	50.0	17.5
NW				50.0			1	50.0	17.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			2		17.4

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF NOVEMBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				28.5			14.2					42.7
101-250		14.2				14.2						28.4
251-500	28.5											28.5
501-750												
TOTAL	28.5	14.2		28.5	14.2		14.2					
NO INVERSION												0.0
											TOTAL NO. OF OCCURENCES	7

INVERSION TYPE												
1				14.2			14.2					28.4
2					14.2							14.2
3	28.5	14.2										42.7
4				14.2								14.2
5												

MONTH OF NOVEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100							50.0					50.0
101-250												
251-500												
501-750												
TOTAL							50.0					
NO INVERSION												50.0
											TOTAL NO. OF OCCURENCES	1

INVERSION TYPE												
1							100.0					100.0
2												
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR NOVEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	1	0
251- 500	0	0
501- 750	0	1
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	3	1
AVERAGE WIND SPEED THRCUGH MIXED LAYER (M/SEC)	4.9	14.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.55

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				14.2			1	14.2	13.4
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		28.5		14.2			3	42.7	7.7
WSW							0	0.0	
W	28.5		14.2				3	42.7	3.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.5	28.5	14.2	28.4			7		6.6

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		25.0					1	25.0	3.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	13.4
WSW							0	0.0	
W	25.0		25.0				2	50.0	4.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	25.0	25.0	25.0			4		6.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		14.2			14.2		2	28.4	10.7
WSW		14.2			14.2		2	28.4	11.4
W				14.2			1	14.2	10.5
WNW	14.2						1	14.2	2.4
NW	14.2						1	14.2	1.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	28.4		14.2	28.4		7		8.3

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE			25.0				1	25.0	6.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	25.0						1	25.0	1.7
SW			25.0				1	25.0	8.8
WSW							0	0.0	
W			25.0				1	25.0	9.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0		75.0				4		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	14.2						1	14.2	2.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			14.2		28.5		3	42.7	15.7
WSW				14.2			1	14.2	10.7
W				14.2			1	14.2	10.5
WNW							0	0.0	
NW	14.2						1	14.2	1.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4		14.2	28.4	28.5		7		10.3

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			25.0				1	25.0	7.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	10.0
WSW				25.0			1	25.0	10.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		25.0					1	25.0	3.3
CALM							0	0.0	
COL. TOTALS		25.0	25.0	50.0			4		7.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		28.5					2	28.5	4.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				14.2	14.2		2	28.4	15.4
WSW				14.2			1	14.2	15.6
W			14.2		14.2		2	28.4	15.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		28.5	14.2	28.4	28.4		7		12.5

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			25.0				1	25.0	9.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			25.0				1	25.0	9.5
SW							0	0.0	
WSW							0	0.0	
W				25.0			1	25.0	11.4
WNW							0	0.0	
NW							0	0.0	
NNW		25.0					1	25.0	3.3
CALM							0	0.0	
COL. TOTALS		25.0	50.0	25.0			4		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			14.2				1	14.2	9.5
WSW					28.5		2	28.5	19.1
W				14.2	14.2		2	28.4	18.5
WNW							0	0.0	
NW							0	0.0	
NNW		14.2	14.2				2	28.4	5.3
CALM							0	0.0	
COL. TOTALS		14.2	28.4	14.2	42.7		7		13.6

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		25.0					1	25.0	3.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					25.0		1	25.0	18.8
WSW							0	0.0	
W				25.0			1	25.0	14.6
WNW							0	0.0	
NW		25.0					1	25.0	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0		25.0	25.0		4		10.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			20.0				1	20.0	9.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW						20.0	1	20.0	26.0
W	20.0				20.0	20.0	3	60.0	18.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		20.0		20.0	40.0	5		17.9

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0					1	25.0	4.2
SW						25.0	1	25.0	27.4
WSW			25.0				1	25.0	8.0
W					25.0		1	25.0	17.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0		25.0	25.0	4		14.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			20.0				1	20.0	9.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				20.0			1	20.0	10.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					20.0		1	20.0	21.4
W						40.0	2	40.0	36.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			20.0	20.0	20.0	40.0	5		22.9

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		33.3					1	33.3	3.0
SW				33.3			1	33.3	11.0
WSW					33.3		1	33.3	23.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3		33.3	33.3		3		12.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			33.3				1	33.3	8.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W						66.6	2	66.6	31.3
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3			66.6	3		23.8

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				50.0			1	50.0	12.1
SW							0	0.0	
WSW							0	0.0	
W				50.0			1	50.0	15.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			2		13.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			100.0				1	100.0	8.7
CALM							0	0.0	
COL. TOTALS			100.0				1		8.7

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			50.0				1	50.0	8.3
WSW					50.0		1	50.0	23.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			50.0		50.0		2		15.9

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF DECEMBER 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				16.6		16.6		16.6				49.8
101-250	33.3											33.3
251-500			16.6									16.6
501-750												
TOTAL	33.3		16.6	16.6		16.6		16.6				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				6

INVERSION TYPE												
1								16.6				16.6
2	16.6		16.6	16.6		16.6						66.4
3												
4	16.6											16.6
5												

MONTH OF DECEMBER 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	33.3			33.3								66.6
101-250			33.3									33.3
251-500												
501-750												
TOTAL	33.3		33.3	33.3								
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				3

INVERSION TYPE												
1												
2				33.3								33.3
3	33.3		33.3									66.6
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR DECEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	1	0
101- 250	0	0
251- 500	2	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	3	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	12.1	8.8
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.86	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		14.2					1	14.2	3.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			14.2				1	14.2	6.7
WSW							0	0.0	
W	14.2	28.5					3	42.7	3.7
WNW							0	0.0	
NW	14.2		14.2				2	28.4	5.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	42.7	28.4				7		4.5

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.2
NNE							0	0.0	
NE	9.0	9.0					2	18.0	3.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0	27.2	9.0				5	45.2	5.0
WSW							0	0.0	
W	9.0	9.0					2	18.0	3.3
WNW							0	0.0	
NW	9.0						1	9.0	2.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.0	45.2	9.0				11		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		14.2					1	14.2	3.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	14.2						1	14.2	.4
SW							0	0.0	
WSW	14.2	14.2	14.2	14.2			4	56.8	6.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			14.2				1	14.2	7.4
CALM							0	0.0	
COL. TOTALS	28.4	28.4	28.4	14.2			7		5.1

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	1.2
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.2
ESE	9.0						1	9.0	.6
SE							0	0.0	
SSE	9.0						1	9.0	2.7
S							0	0.0	
SSW							0	0.0	
SW	9.0	9.0	18.1	9.0			5	45.1	6.6
WSW	9.0						1	9.0	2.4
W			9.0				1	9.0	6.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.0	18.0	27.1	9.0			11		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		14.2					1	14.2	3.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		14.2	14.2				2	28.4	6.7
WSW			14.2	28.5			3	42.7	9.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			14.2				1	14.2	7.4
CALM							0	0.0	
COL. TOTALS		28.4	42.6	28.5			7		7.4

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	.7
E	9.0						1	9.0	2.3
ESE	9.0						1	9.0	2.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0	9.0	18.1	9.0			5	45.1	6.5
WSW	9.0		9.0				2	18.0	5.4
W			9.0				1	9.0	6.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.0	9.0	36.1	9.0			11		5.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	14.2						1	14.2	.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		14.2		28.5			3	42.7	10.1
WSW					14.2		1	14.2	22.5
W		14.2					1	14.2	4.2
WNW							0	0.0	
NW			14.2				1	14.2	8.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	28.4	14.2	28.5	14.2		7		9.4

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	1.4
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	1.9
S							0	0.0	
SSW							0	0.0	
SW	9.0	9.0	9.0				3	27.0	4.0
WSW				18.1			2	18.1	12.4
W		9.0		9.0			2	18.0	8.1
WNW			9.0				1	9.0	8.1
NW							0	0.0	
NNW	9.0						1	9.0	1.4
CALM							0	0.0	
COL. TOTALS	36.0	18.0	18.0	27.1			11		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						1	16.6	.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			16.6				1	16.6	6.2
SW				16.6			1	16.6	12.2
WSW					16.6		1	16.6	16.6
W							0	0.0	
WNW							0	0.0	
NW			16.6				1	16.6	8.5
NNW			16.6				1	16.6	6.9
CALM							0	0.0	
COL. TOTALS	16.6		49.8	16.6	16.6		6		8.5

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	4.9
SW		9.0	9.0				2	18.0	5.7
WSW			9.0				1	9.0	6.8
W		9.0	9.0	18.1			4	36.1	9.9
WNW					9.0		1	9.0	21.1
NW		9.0					1	9.0	3.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	36.0	27.0	18.1	9.0		11		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		16.6					1	16.6	3.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		16.6					1	16.6	4.1
SW							0	0.0	
WSW			16.6	16.6			2	33.2	11.0
W							0	0.0	
WNW							0	0.0	
NW			16.6				1	16.6	8.8
NNW				16.6			1	16.6	15.3
CALM							0	0.0	
COL. TOTALS		33.2	33.2	33.2			6		8.8

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.9
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	1.7
SE							0	0.0	
SSE							0	0.0	
S		9.0	9.0				2	18.0	5.4
SSW				9.0			1	9.0	10.0
SW			9.0				1	9.0	7.2
WSW							0	0.0	
W				9.0			1	9.0	14.8
WNW				18.1		9.0	3	27.1	17.5
NW							0	0.0	
NNW	9.0						1	9.0	2.7
CALM							0	0.0	
COL. TOTALS	27.0	9.0	18.0	36.1		9.0	11		9.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	20.0						1	20.0	2.2
SW							0	0.0	
WSW			20.0				1	20.0	9.7
W				20.0			1	20.0	13.7
WNW							0	0.0	
NW				20.0			1	20.0	10.6
NNW				20.0			1	20.0	12.1
CALM							0	0.0	
COL. TOTALS	20.0		20.0	60.0			5		9.6

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				27.2	9.0		4	36.2	13.0
SW	9.0		9.0				2	18.0	5.9
WSW							0	0.0	
W							0	0.0	
WNW					9.0		1	9.0	17.8
NW	9.0			9.0	18.1		4	36.1	14.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0		9.0	36.2	36.1		11		12.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	2.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				25.0			1	25.0	14.7
NW			25.0	25.0			2	50.0	9.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0		25.0	50.0			4		9.2

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	2.0
SSW			9.0	9.0			2	18.0	6.3
SW	9.0						1	9.0	2.1
WSW							0	0.0	
W				18.1			2	18.1	10.6
WNW		9.0		9.0			2	18.0	7.0
NW				9.0	9.0		2	18.0	15.2
NNW					9.0		1	9.0	19.6
CALM							0	0.0	
COL. TOTALS	18.0	9.0	9.0	45.1	18.0		11		9.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW			50.0				1	50.0	8.0
NNW	50.0						1	50.0	1.9
CALM							0	0.0	
COL. TOTALS	50.0		50.0				2		4.7

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		11.1					1	11.1	5.0
SW			11.1				1	11.1	6.3
WSW							0	0.0	
W					22.2		2	22.2	16.1
WNW				11.1			1	11.1	12.6
NW				11.1	22.2		3	33.3	16.6
NNW	11.1						1	11.1	2.4
CALM							0	0.0	
COL. TOTALS	11.1	11.1	11.1	22.2	44.4		9		12.0

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	8.3				8.3	8.3	25.0					49.9
101-250		8.3		16.6			8.3					33.2
251-500	8.3											8.3
501-750		8.3										8.3
TOTAL	16.6	16.6		16.6	8.3	8.3	33.3					
NO INVERSION												0.0
									TOTAL NO. OF OCCURENCES			12
INVERSION TYPE												
1							16.6					16.6
2					8.3	8.3	16.6					33.2
3	16.6	8.3		16.6								41.5
4		8.3										8.3
5												

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100		4.5	4.5	13.6	13.6	9.0	9.0	4.5				58.7
101-250	13.6	4.5	4.5	9.0		4.5				4.5		40.6
251-500												
501-750												
TOTAL	13.6	9.0	9.0	22.6	13.6	13.5	9.0	4.5		4.5		
NO INVERSION												0.0
									TOTAL NO. OF OCCURENCES			22
INVERSION TYPE												
1	4.5	4.5	9.0	4.5	9.0	4.5	9.0			4.5		49.5
2	4.5	4.5		13.6		9.0		4.5				36.1
3	4.5			4.5	4.5							13.5
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	1	0
101- 250	0	3
251- 500	1	3
501- 750	0	0
751-1000	1	0
1001-1500	0	0
>1500	0	0
TOTAL	3	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	9.0	5.1
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-02.17	-00.85

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		16.6					1	16.6	3.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	16.6						1	16.6	1.3
SSW							0	0.0	
SW	16.6						1	16.6	2.2
WSW							0	0.0	
W		33.3					2	33.3	5.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	16.0	
COL. TOTALS	33.2	49.9					6		2.9

SURFACE WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		14.2					1	14.2	4.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	14.2						1	14.2	1.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		28.5					2	28.5	4.2
WNW							0	0.0	
NW	28.5			14.2			3	42.7	5.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	42.7	42.7		14.2			7		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	16.6						1	16.6	2.5
ESE							0	0.0	
SE	33.3						2	33.3	.8
SSE							0	0.0	
S	16.6						1	16.6	1.7
SSW							0	0.0	
SW							0	0.0	
WSW	16.6		16.6				2	33.2	4.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	83.1		16.6				6		2.5

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		14.2					1	14.2	3.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	14.2						1	14.2	1.6
SSW							0	0.0	
SW			14.2				1	14.2	8.3
WSW	14.2						1	14.2	2.6
W							0	0.0	
WNW							0	0.0	
NW	14.2	14.2					2	28.4	3.2
NNW			14.2				1	14.2	7.5
CALM							0	0.0	
COL. TOTALS	42.6	28.4	28.4				7		4.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		16.6					1	16.6	3.0
NE							0	0.0	
ENE	16.6						1	16.6	2.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		16.6	33.3				3	49.9	5.7
WSW					16.6		1	16.6	18.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	33.2	33.3		16.6		6		6.8

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	14.2						1	14.2	1.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		14.2					1	14.2	4.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				14.2			1	14.2	11.1
WSW		14.2					1	14.2	5.6
W							0	0.0	
WNW							0	0.0	
NW	14.2		14.2				2	28.4	4.7
NNW			14.2				1	14.2	7.5
CALM							0	0.0	
COL. TOTALS	28.4	28.4	28.4	14.2			7		5.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	16.6						1	16.6	2.9
E		16.6					1	16.6	3.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		16.6		33.3	16.6		4	66.5	11.7
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	33.2		33.3	16.6		6		8.9

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	14.2						1	14.2	2.3
ENE	14.2						1	14.2	2.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			28.5				2	28.5	7.6
W							0	0.0	
WNW							0	0.0	
NW			14.2	14.2			2	28.4	9.8
NNW	14.2						1	14.2	.7
CALM							0	0.0	
COL. TOTALS	42.6		42.7	14.2			7		5.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	16.6						1	16.6	.9
ESE			16.6				1	16.6	7.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				16.6			1	16.6	11.1
SW				33.3			2	33.3	12.8
WSW			16.6				1	16.6	9.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6		33.2	49.9			6		9.0

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			14.2				1	14.2	6.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	14.2		14.2				2	28.4	4.4
SW							0	0.0	
WSW			14.2	14.2			2	28.4	8.8
W							0	0.0	
WNW							0	0.0	
NW				14.2	14.2		2	28.4	14.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2		42.6	28.4	14.2		7		8.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				16.6			1	16.6	10.3
SSE							0	0.0	
S		16.6	16.6				2	33.2	5.2
SSW							0	0.0	
SW							0	0.0	
WSW				33.3			2	33.3	10.5
W					16.6		1	16.6	17.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	16.6	49.9	16.6		6		9.8

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	14.2						1	14.2	1.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		14.2					1	14.2	3.8
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	14.2						1	14.2	.6
WSW							0	0.0	
W	14.2		14.2		14.2		3	42.6	10.9
WNW							0	0.0	
NW					14.2		1	14.2	24.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	42.6	14.2	14.2		28.4		7		9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		16.6					1	16.6	3.5
SSE			16.6				1	16.6	7.1
S							0	0.0	
SSW				16.6			1	16.6	13.1
SW							0	0.0	
WSW					16.6		1	16.6	18.7
W				16.6	16.6		2	33.2	17.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	16.6	33.2	33.2		6		12.7

1000 METER LEVEL WINDS AFTERNCON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			14.2				1	14.2	9.7
SW							0	0.0	
WSW							0	0.0	
W	14.2	14.2				14.2	3	42.6	11.6
WNW		14.2	14.2				2	28.4	5.9
NW					14.2		1	14.2	21.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	28.4	28.4		14.2	14.2	7		11.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				20.0			1	20.0	10.4
SSW							0	0.0	
SW							0	0.0	
WSW		20.0					1	20.0	3.5
W					40.0	20.0	3	60.0	26.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0		20.0	40.0	20.0	5		18.6

1500 METER LEVEL WINDS AFTERNCON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	14.2						1	14.2	1.3
SSE							0	0.0	
S		14.2					1	14.2	5.6
SSW							0	0.0	
SW				14.2			1	14.2	12.8
WSW							0	0.0	
W						14.2	1	14.2	39.4
WNW				14.2	14.2		2	28.4	17.9
NW			14.2				1	14.2	7.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	14.2	14.2	28.4	14.2	14.2	7		14.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			25.0				1	25.0	7.7
SSW							0	0.0	
SW			25.0				1	25.0	7.9
WSW							0	0.0	
W							0	0.0	
WNW						25.0	1	25.0	30.4
NW			25.0				1	25.0	9.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			75.0			25.0	4		13.8

2000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		16.6					1	16.6	4.0
SSW							0	0.0	
SW				16.6			1	16.6	15.2
WSW							0	0.0	
W						16.6	1	16.6	27.1
WNW			16.6				1	16.6	9.9
NW				16.6		16.6	2	33.2	24.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	16.6	33.2		33.2	6		17.4

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF FEBRUARY 1979 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	12.5				12.5							25.0
101-250			12.5	12.5								25.0
251-500	25.0				12.5							37.5
501-750	12.5											12.5
TOTAL	50.0		12.5	12.5	25.0							
NO INVERSION												0.0
											TOTAL NO. OF OCCURENCES	8
INVERSION TYPE												
1					12.5							12.5
2	25.0			12.5	12.5							50.0
3	25.0		12.5									37.5
4												
5												

MONTH OF FEBRUARY 1979 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				10.0	10.0	10.0	10.0	20.0				60.0
101-250	10.0		10.0									20.0
251-500												
501-750			10.0									10.0
TOTAL	10.0		20.0	10.0	10.0	10.0	10.0	20.0				
NO INVERSION												10.0
											TOTAL NO. OF OCCURENCES	9
INVERSION TYPE												
1				11.1			11.1	22.2				44.4
2	11.1				11.1	11.1						33.3
3												
4			22.2									22.2
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR FEBRUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	1	0
101- 250	3	2
251- 500	0	1
501- 750	1	0
751-1000	0	1
1001-1500	0	0
>1500	0	1
TOTAL	5	5
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.6	7.9
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.09	-00.72

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

SURFACE WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	20.0						1	20.0	1.3
NNE							0	0.0	
NE	20.0						1	20.0	2.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	20.0	20.0					2	40.0	2.9
WSW							0	0.0	
W		20.0					1	20.0	4.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0	40.0					5		2.8

SURFACE WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	12.5						1	12.5	1.8
NNE							0	0.0	
NE		25.0					2	25.0	4.0
ENE							0	0.0	
E		12.5					1	12.5	5.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	12.5						1	12.5	2.7
WSW							0	0.0	
W		25.0					2	25.0	4.0
WNW							0	0.0	
NW		12.5					1	12.5	3.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	75.0					8		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		20.0					1	20.0	4.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			40.0				2	40.0	6.8
WSW							0	0.0	
W		20.0	20.0				2	40.0	5.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		40.0	60.0				5		5.6

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		12.5					1	12.5	5.2
E	25.0						2	25.0	2.0
ESE				12.5			1	12.5	10.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	12.5		12.5				2	25.0	4.8
WSW				12.5			1	12.5	10.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		12.5					1	12.5	3.4
CALM							0	0.0	
COL. TOTALS	37.5	25.0	12.5	25.0			8		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		20.0					1	20.0	3.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		20.0	20.0				2	40.0	7.2
WSW			20.0				1	20.0	8.4
W							0	0.0	
WNW			20.0				1	20.0	8.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		40.0	60.0				5		6.9

200 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	12.5	12.5					2	25.0	2.5
E		12.5					1	12.5	4.9
ESE				12.5			1	12.5	10.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	12.5						1	12.5	.9
SW			12.5				1	12.5	7.3
WSW			12.5				1	12.5	7.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		12.5					1	12.5	5.4
CALM							0	0.0	
COL. TOTALS	25.0	37.5	25.0	12.5			8		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		20.0					1	20.0	3.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			20.0	40.0			3	60.0	10.9
W							0	0.0	
WNW				20.0			1	20.0	11.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	20.0	60.0			5		9.5

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	12.5						1	12.5	1.7
E	12.5	12.5					2	25.0	4.2
ESE				12.5			1	12.5	12.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			12.5				1	12.5	8.1
WSW		12.5					1	12.5	5.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	12.5		12.5				2	25.0	3.5
CALM							0	0.0	
COL. TOTALS	37.5	25.0	25.0	12.5			8		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		20.0					1	20.0	4.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			20.0				1	20.0	8.4
WSW				20.0			1	20.0	13.9
W				20.0			1	20.0	13.7
WNW							0	0.0	
NW				20.0			1	20.0	15.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	20.0	60.0			5		11.2

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	12.5						1	12.5	2.3
E		12.5					1	12.5	4.8
ESE		12.5	12.5				2	25.0	6.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				12.5			1	12.5	10.3
WSW		12.5					1	12.5	3.8
W	12.5						1	12.5	2.5
WNW							0	0.0	
NW		12.5					1	12.5	4.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0	12.5	12.5			8		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		20.0					1	20.0	5.2
SW		20.0					1	20.0	3.6
WSW							0	0.0	
W					40.0		2	40.0	17.1
WNW							0	0.0	
NW					20.0		1	20.0	16.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		40.0			60.0		5		11.9

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	12.5						1	12.5	2.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		12.5	12.5				2	25.0	5.5
S		12.5					1	12.5	3.8
SSW							0	0.0	
SW							0	0.0	
WSW		12.5	12.5				2	25.0	6.1
W		25.0					2	25.0	4.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	62.5	25.0				8		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		25.0					1	25.0	3.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					25.0	25.0	2	50.0	26.4
WNW							0	0.0	
NW					25.0		1	25.0	18.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0			50.0	25.0	4		18.5

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		14.2					1	14.2	4.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			14.2				1	14.2	6.2
SSW				14.2			1	14.2	10.2
SW							0	0.0	
WSW		14.2					1	14.2	3.2
W		14.2		14.2			2	28.4	8.3
WNW		14.2					1	14.2	4.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		56.8	14.2	28.4			7		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	25.0						1	25.0	2.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W						25.0	1	25.0	44.8
WNW					25.0		1	25.0	17.9
NW							0	0.0	
NNW				25.0			1	25.0	14.9
CALM							0	0.0	
COL. TOTALS	25.0			25.0	25.0	25.0	4		19.9

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	16.6						1	16.6	1.8
ENE							0	0.0	
E	16.6						1	16.6	2.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			16.6				1	16.6	6.7
SSW							0	0.0	
SW			16.6				1	16.6	6.0
WSW							0	0.0	
W		16.6			16.6		2	33.2	10.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	16.6	33.2		16.6		6		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			25.0		25.0		2	50.0	14.6
NW	25.0						1	25.0	2.5
NNW					25.0		1	25.0	21.1
CALM							0	0.0	
COL. TOTALS	25.0		25.0		50.0		4		13.2

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			20.0				1	20.0	6.9
SW							0	0.0	
WSW		20.0					1	20.0	3.0
W			20.0		20.0		2	40.0	13.3
WNW							0	0.0	
NW							0	0.0	
NNW		20.0					1	20.0	4.0
CALM							0	0.0	
COL. TOTALS		40.0	40.0		20.0		5		8.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MONTH OF MARCH 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100			5.8	23.5	17.6		5.8					52.7
101-250	5.8	5.8		5.8	5.8							23.2
251-500	5.8					5.8	5.8					17.4
501-750												
TOTAL	11.6	5.8	5.8	29.3	23.4	5.8	11.6					
NO INVERSION												5.0
								TOTAL NO. OF OCCURENCES				16

INVERSION TYPE												
1				6.2	18.7							24.9
2		6.2	6.2	12.5			12.5					37.4
3	12.5			12.5	6.2							31.2
4						6.2						6.2
5												

MONTH OF MARCH 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	20.0				10.0			20.0	10.0			60.0
101-250							20.0					20.0
251-500					10.0							10.0
501-750												
TOTAL	20.0				20.0		20.0	20.0	10.0			
NO INVERSION												10.0
								TOTAL NO. OF OCCURENCES				9

INVERSION TYPE												
1							22.2	22.2	11.1			55.5
2	11.1				11.1							22.2
3	11.1											11.1
4					11.1							11.1
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BILLINGS - VOTECH - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MARCH 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	2	1
251- 500	1	0
501- 750	1	3
751-1000	0	0
1001-1500	1	0
>1500	0	2
TOTAL	5	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	7.6	5.5
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.93	-01.07

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF SEPT. 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	1	1	2	0	0	0	0	0	0	4
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	11	1	1	2	0	0	0	0	0	0	22
---TIME 601-1200 MST											
001-100	2	1	1	0	0	0	0	0	0	0	4
101-300	2	2	1	0	0	0	0	0	0	0	5
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	4	3	2	0	0	0	0	0	0	0	23
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											23
TOTAL	0	0	0	0	0	0	0	0	0	0	23
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	10	0	0	0	0	0	0	0	0	0	23
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	3	2	2	2	0	0	0	0	0	0	9
101-300	20	2	1	0	0	0	0	0	0	0	23
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											57
TOTAL	25	4	3	2	0	0	0	0	0	0	91

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF SEPT. 1978

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											20
TOTAL	0	0	1	1	0	0	0	0	0	0	22
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											23
TOTAL	0	0	0	0	0	0	0	0	0	0	23
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											23
TOTAL	0	0	0	0	0	0	0	0	0	0	23
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											23
TOTAL	0	0	0	0	0	0	0	0	0	0	23
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											89
TOTAL	0	0	1	1	0	0	0	0	0	0	91

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF SEPT. 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	F	E	E	D	C	C	C	D	D	D	D	F
2	F	E	E	D	C	C	C	C	D	D	D	E
3	E	E	E	E	D	C	C	D	D	E	E	E
4	F	E	E	E	D	C	C	C	C	D	F	F
5	F	E	E	E	E	D	C	D	D	D	D	E
6	D	D	D	D	C	C	C	C	D	D	D	E
7	D	D	D	C	C	C	C	C	D	D	D	D
8	E	E	E	D	C	C	C	C	D	D	D	F
9	F	E	E	F	D	B	C	C	D	F	E	E
10	E	E	E	E	D	D	D	D	D	D	D	D
11	D	D	D	D	D	D	D	D	D	D	D	D
12	D	D	D	D	D	D	D	D	D	D	D	D
13	D	D	D	D	C	C	D	D	D	F	E	E
14	E	E	E	D	C	C	C	C	D	E	E	E
15	E	E	E	E	D	C	C	C	D	D	D	D
16	D	D	D	D	C	C	C	C	D	D	D	D
17	E	E	E	D	C	C	C	C	D	D	D	D
18	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	E	E	C	C	C	D	E	E	E
26	E	E	E	E	D	C	C	C	D	E	F	F
27	F	E	E	E	D	C	C	C	D	D	E	D
28	D	D	D	D	M	M	D	D	D	E	E	D
29	D	D	E	D	D	C	C	C	D	E	E	E
30	E	E	E	E	D	C	C	D	D	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.3 % C=16.7 % D=33.6 % E=20.6 % F= 4.2 %

U= 0.0 % M=24.7 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BILLINGS
WIND DATA USED FROM NWS STATION AT BILLINGS

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF OCTOBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	23	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	2	1	1	1	0	0	0	0	0	0	5
101-300	10	5	0	0	0	0	0	0	0	0	15
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	12	6	1	1	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	21	0	0	0	0	0	0	0	0	0	21
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	25	0	0	0	0	0	0	0	0	0	31
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	5	1	1	1	0	0	0	0	0	0	8
101-300	50	5	0	0	0	0	0	0	0	0	55
301-500	5	0	0	0	0	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											55
TOTAL	60	6	1	1	0	0	0	0	0	0	123

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF OCTOBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	2	1	0	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	2	1	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	3	1	0	0	0	0	0	4
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	3	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	5	2	0	0	0	0	0	7
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											116
TOTAL	0	0	0	5	2	0	0	0	0	0	123

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF OCTOBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	D	D	D	D	D	D	D	D
2	D	D	D	D	C	C	C	D	D	D	E	E
3	E	E	E	D	D	C	C	D	E	E	E	D
4	D	D	E	D	E	C	C	C	D	D	F	F
5	E	E	E	E	D	C	C	C	D	F	F	F
6	F	F	F	F	C	D	C	C	D	D	F	F
7	F	E	E	E	D	C	C	D	D	E	E	E
8	E	E	E	E	D	C	C	C	D	F	F	F
9	E	E	E	E	D	C	C	C	D	E	E	E
10	E	E	E	D	C	C	C	D	D	E	E	E
11	E	E	E	D	C	C	C	D	E	E	D	D
12	D	D	D	D	C	C	C	D	D	F	E	E
13	E	E	E	E	D	C	C	D	D	D	F	F
14	E	E	E	E	D	C	C	C	E	E	E	E
15	E	F	F	E	D	C	C	C	D	F	E	E
16	E	E	E	E	D	C	C	D	D	D	E	D
17	D	D	E	D	D	C	C	D	D	D	D	D
18	D	D	D	D	C	C	C	D	E	E	E	E
19	E	E	E	D	C	C	C	D	E	E	E	E
20	E	E	E	E	D	C	C	D	E	E	E	E
21	E	E	E	D	D	D	D	D	D	D	D	D
22	D	D	D	D	C	C	C	C	D	F	E	E
23	E	E	E	E	D	D	D	D	E	E	E	E
24	E	E	E	E	E	D	D	D	D	D	D	D
25	M	M	M	M	C	C	C	D	D	E	E	E
26	E	E	E	D	C	C	C	C	E	E	E	E
27	E	E	E	E	B	D	C	C	D	E	E	E
28	E	E	E	E	D	C	C	C	D	E	F	F
29	E	E	E	E	D	C	D	D	D	D	E	E
30	F	F	F	F	D	C	C	C	D	F	E	E
31	E	E	E	E	D	C	C	C	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.3 % C=19.9 % D=33.1 % E=37.9 % F= 7.8 %

U= 0.0 % M= 1.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BILLINGS
WIND DATA USED FROM NWS STATION AT BILLINGS

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF NOVEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	6	0	0	0	0	0	0	0	0	0	6
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	9	0	0	0	0	0	0	0	0	0	12
---TIME 601-1200 MST											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	3	2	0	0	0	0	0	0	0	0	5
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	4	3	0	0	0	0	0	0	0	0	14
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	1	1	0	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	1	1	0	0	0	0	0	0	0	0	12
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	9	0	0	0	0	0	0	0	0	0	12
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	2	1	0	0	0	0	0	0	0	0	3
101-300	19	3	0	0	0	0	0	0	0	0	22
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											23
TOTAL	23	4	0	0	0	0	0	0	0	0	50

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF NOVEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	0	0	0	1	0	0	0	0	0	0	12
---TIME 601-1200 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	0	0	0	1	0	0	0	0	0	0	14
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	0	0	0	0	0	0	0	0	0	0	12
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	0	0	0	0	0	0	0	0	0	0	12
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	2	0	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											48
TOTAL	0	0	0	2	0	0	0	0	0	0	50

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF NOVEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

	HOUR											
DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	D	E	E	E	D	C	C	C	E	E	E	E
2	E	E	E	E	C	D	C	D	E	E	E	E
3	E	E	E	E	D	C	C	C	D	D	E	E
4	E	E	E	D	D	D	D	D	D	D	D	D
5	D	D	D	D	C	C	C	C	D	D	F	F
6	E	E	E	E	D	C	C	D	D	E	E	E
7	E	E	D	D	D	D	D	D	D	E	E	E
8	E	E	E	D	D	D	D	D	D	D	D	D
9	D	D	D	D	D	D	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	E	E	E	D	D	D	E	E	E
23	E	E	E	E	E	E	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	D	D	D	D	E	E	E
29	E	E	E	E	E	C	C	E	E	E	E	E
30	E	E	E	E	E	E	E	E	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 4.4 % D=14.7 % E=21.4 % F= 0.6 %

U= 0.0 % M=58.9 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BILLINGS
WIND DATA USED FROM NWS STATION AT BILLINGS

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF DECEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	2	1	1	1	0	0	0	0	0	0	5
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	19	1	1	1	0	0	0	0	0	0	27
---TIME 601-1200 MST											
001-100	1	0	0	1	0	0	0	0	0	0	2
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	20	0	0	1	0	0	0	0	0	0	27
---TIME 1201-1800 MST											
001-100	2	2	0	0	0	0	0	0	0	0	4
101-300	8	1	0	0	0	0	0	0	0	0	9
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											15
TOTAL	10	3	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	17	0	0	0	0	0	0	0	0	0	17
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											8
TOTAL	19	1	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	6	4	1	2	0	0	0	0	0	0	13
101-300	58	1	0	0	0	0	0	0	0	0	59
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											34
TOTAL	68	5	1	2	0	0	0	0	0	0	110

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF DECEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	0	0	0	0	0	0	27
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	0	0	0	0	0	0	27
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	1	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											109
TOTAL	0	0	0	1	0	0	0	0	0	0	110

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF DECEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	D	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	E	E	E	E	E
3	E	E	D	D	D	D	D	D	D	D	D	E
4	E	E	D	D	D	D	D	D	D	D	D	D
5	D	E	E	E	E	E	D	D	E	E	E	E
6	E	D	D	E	E	E	F	E	E	F	E	E
7	E	E	E	E	E	E	D	D	D	D	D	D
8	D	E	E	E	E	D	D	D	D	E	E	E
9	D	D	D	D	E	E	E	E	E	E	E	E
10	E	E	D	D	D	D	D	E	E	E	E	E
11	E	E	E	E	E	E	E	E	E	E	E	E
12	D	D	D	E	D	D	D	D	D	F	E	E
13	E	E	D	D	D	D	D	D	E	E	E	E
14	E	E	E	E	E	E	E	E	E	E	E	E
15	E	E	E	D	D	D	D	D	D	D	E	E
16	E	E	E	E	E	D	C	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	E	E	E
18	F	E	E	E	E	E	E	E	E	D	D	D
19	E	E	E	E	E	E	E	E	E	E	E	E
20	E	E	E	E	E	E	E	E	E	E	E	E
21	D	D	D	E	E	D	D	D	D	D	D	E
22	E	E	E	E	E	E	D	D	D	D	D	D
23	D	E	E	D	D	D	E	E	E	E	E	E
24	E	E	E	E	E	E	D	D	D	D	D	D
25	E	E	E	E	E	D	D	D	D	E	F	F
26	E	E	E	E	E	E	E	D	D	E	E	E
27	E	E	E	E	E	E	E	E	D	D	D	D
28	M	M	M	M	M	M	M	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	D	D	D	D	D	D
31	F	E	E	E	D	D	D	D	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 0.3 % D=32.0 % E=54.0 % F= 1.9 %

U= 0.0 % M=11.8 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BILLINGS
WIND DATA USED FROM NWS STATION AT BILLINGS

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF JANUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	5	0	2	0	0	0	0	0	0	0	7
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	20	0	2	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	5	0	1	0	0	0	0	0	0	0	6
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	18	0	1	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	2	0	0	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	3	1	0	0	0	0	0	0	0	0	29
---TIME 1801-2400 MST											
001-100	4	0	1	0	0	0	0	0	0	0	5
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	17	0	1	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	15	1	4	0	0	0	0	0	0	0	20
101-300	39	0	0	0	0	0	0	0	0	0	39
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											50
TOTAL	58	1	4	0	0	0	0	0	0	0	113

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF JANUARY 1979

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	0	0	0	0	29
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											113
TOTAL	0	0	0	0	0	0	0	0	0	0	113

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF JANUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	E	E	D	D	D	D	D	D	D	D
2	D	D	D	D	D	D	E	E	E	E	E	E
3	E	E	E	E	E	D	D	D	D	D	D	D
4	D	E	D	D	D	D	D	D	F	F	E	E
5	E	E	E	D	D	D	D	D	D	E	E	E
6	E	E	E	E	E	E	D	D	D	F	E	E
7	F	E	E	E	E	E	D	D	D	E	E	D
8	D	D	E	E	D	D	D	D	D	D	E	E
9	E	E	E	E	E	D	D	D	D	D	D	D
10	D	D	D	D	E	D	D	D	D	E	E	E
11	E	E	E	E	D	D	D	D	D	D	D	D
12	D	D	D	D	D	D	D	D	D	D	D	D
13	D	D	D	D	D	D	D	D	C	C	E	E
14	F	F	F	E	E	D	D	D	D	D	D	D
15	D	D	D	E	E	E	D	D	D	D	D	D
16	D	E	E	E	E	D	D	D	E	E	E	E
17	E	F	F	F	F	F	E	M	M	M	M	M
18	M	M	M	M	M	E	D	D	D	F	F	F
19	F	E	E	E	E	E	D	D	D	E	E	E
20	E	F	F	F	E	E	F	E	E	E	E	E
21	E	E	E	E	E	E	E	E	E	D	D	D
22	D	D	D	D	D	D	D	E	E	E	E	E
23	E	E	E	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	E	E	F	F
26	E	E	E	D	D	D	D	D	D	D	D	D
27	F	F	F	E	E	E	D	D	D	E	E	E
28	E	E	D	D	D	D	D	D	D	E	E	E
29	E	E	E	F	F	F	D	D	D	C	F	F
30	E	E	E	E	E	D	D	D	D	D	D	D
31	E	E	E	E	E	D	D	C	D	C	C	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 0.0 % D=45.2 % E=36.0 % F= 8.3 %

U= 0.0 % M=10.5 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BILLINGS
WIND DATA USED FROM NWS STATION AT BILLINGS

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF FEBRUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	1	3	1	0	0	0	0	0	0	5
101-300	11	1	0	0	0	0	0	0	0	0	12
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	12	2	3	1	0	0	0	0	0	0	25
---TIME 601-1200 MST											
001-100	2	2	1	0	0	0	0	0	0	0	5
101-300	13	1	0	0	0	0	0	0	0	0	14
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	16	3	1	0	0	0	0	0	0	0	26
---TIME 1201-1800 MST											
001-100	1	3	0	2	0	0	0	0	0	0	6
101-300	6	0	0	0	0	0	0	0	0	0	6
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											14
TOTAL	7	3	0	2	0	0	0	0	0	0	26
---TIME 1801-2400 MST											
001-100	1	1	2	2	1	0	0	0	0	0	7
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	13	1	2	2	1	0	0	0	0	0	25
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	4	7	6	5	1	0	0	0	0	0	23
101-300	42	2	0	0	0	0	0	0	0	0	44
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											33
TOTAL	48	9	6	5	1	0	0	0	0	0	102

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF FEBRUARY 1979

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	0	0	0	0	0	0	0	25
---TIME 601-1200 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	1	0	0	0	0	0	0	0	26
---TIME 1201-1800 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	0	1	0	0	0	0	0	26
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	0	0	0	0	0	0	0	25
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	0	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											100
TOTAL	0	0	1	0	1	0	0	0	0	0	102

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BILLINGS MONTH OF FEBRUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

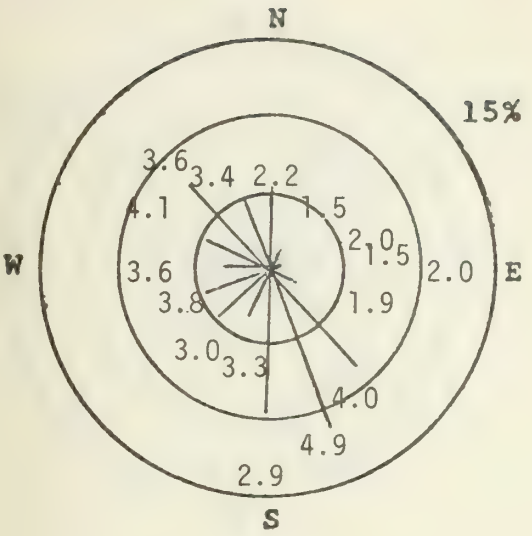
DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	F	E	E	D	D	D	D	D	D	D
2	D	D	D	E	D	D	D	D	D	E	E	E
3	D	D	E	E	E	E	D	D	D	D	D	D
4	E	E	E	E	F	D	D	D	E	E	E	E
5	E	E	E	E	E	E	E	E	E	E	E	E
6	E	E	E	E	E	E	E	E	E	E	E	E
7	E	E	E	E	D	D	D	D	D	D	E	E
8	F	F	F	D	D	D	D	D	E	E	E	E
9	E	E	E	E	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	D	D	D
11	D	D	D	D	E	E	D	D	D	D	D	D
12	D	D	D	E	E	E	E	D	D	D	D	D
13	D	D	D	D	E	E	E	E	E	E	E	E
14	E	E	E	E	D	D	D	D	D	D	D	D
15	D	D	D	D	D	D	D	D	D	D	D	D
16	D	D	D	D	F	F	E	E	D	D	D	D
17	D	E	E	E	F	D	D	D	D	F	F	F
18	E	F	F	E	D	D	D	D	D	D	E	E
19	E	E	E	E	E	D	D	D	D	D	D	D
20	D	D	D	F	E	E	F	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	D	C	C	D	D	D	D
24	D	D	E	E	D	D	D	D	E	E	E	E
25	E	E	E	D	D	D	D	D	C	E	E	E
26	E	E	E	E	D	D	D	E	E	E	E	E
27	D	D	D	D	D	D	D	D	D	D	D	D
28	D	D	D	D	E	E	E	D	D	D	C	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

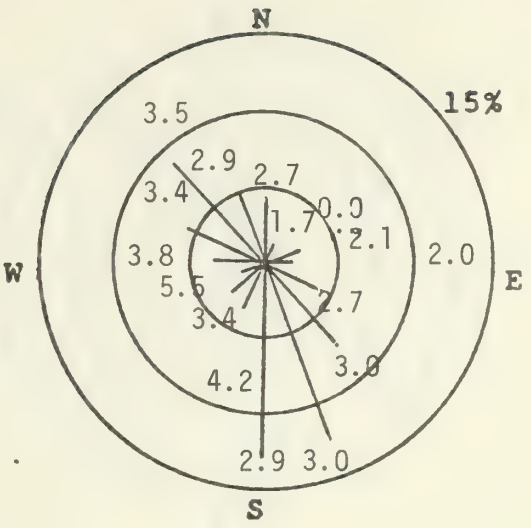
A= 0.0 % B= 0.0 % C= 0.6 % D=45.8 % E=39.0 % F= 4.5 %

U= 0.0 % M=10.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BILLINGS
WIND DATA USED FROM NWS STATION AT BILLINGS

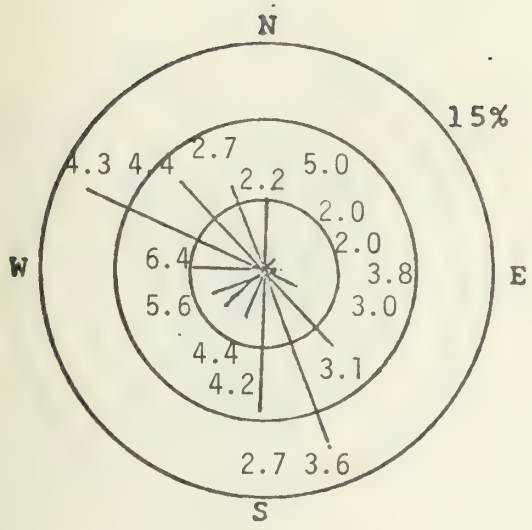


January 1978
Calm 30.2%
Total Hours 744

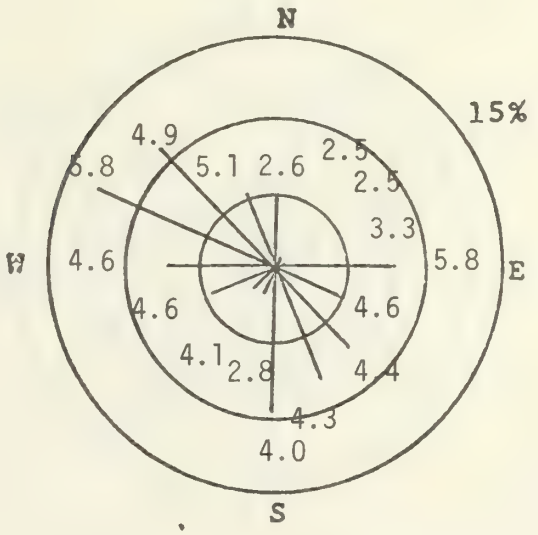


February 1978
Calm 35.3%
Total Hours 672

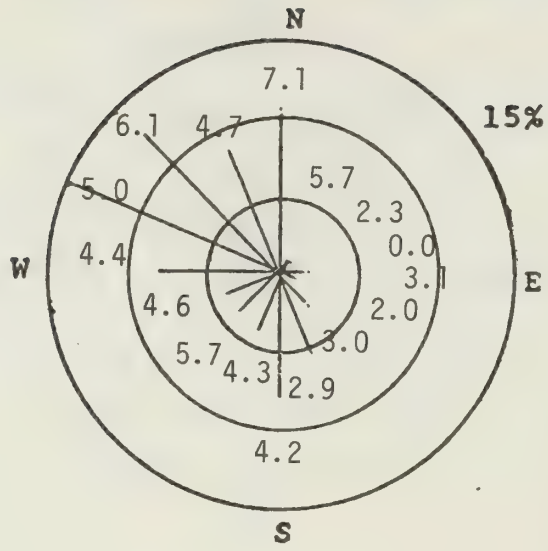
Monthly Wind Roses
FAA
Butte, Montana



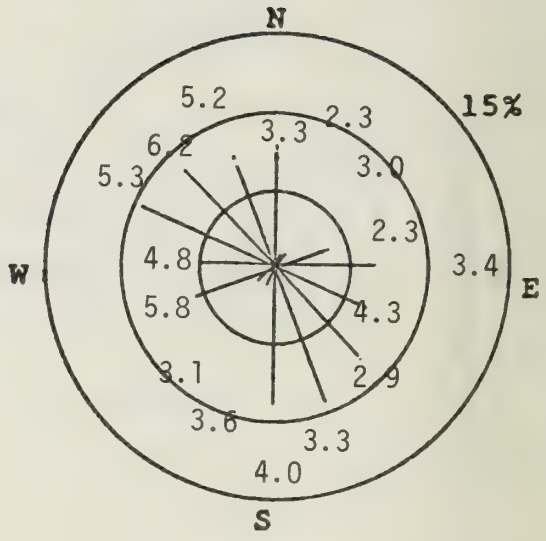
March 1978
Calm 22.6%
Total Hours 744



April 1978
Calm 11.3%
Total Hours 720

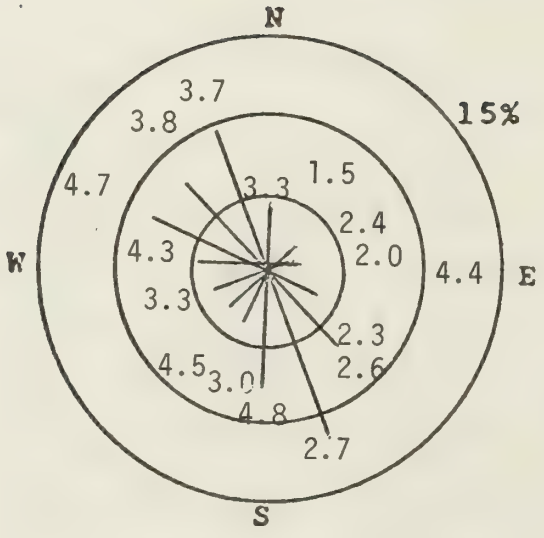


May 1978
Calm 14.9%
Total Hours 744

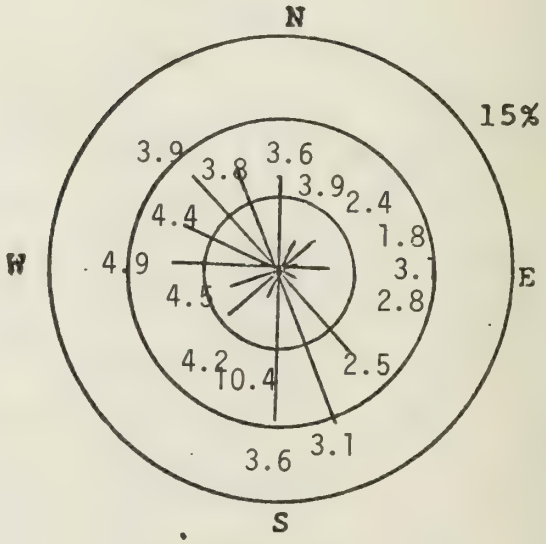


June 1978
Calm 11.7%
Total Hours 717

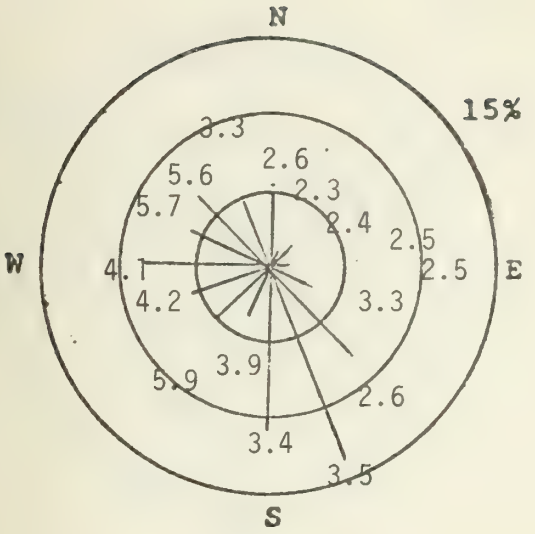
Monthly Wind Roses
FAA
Butte, Montana



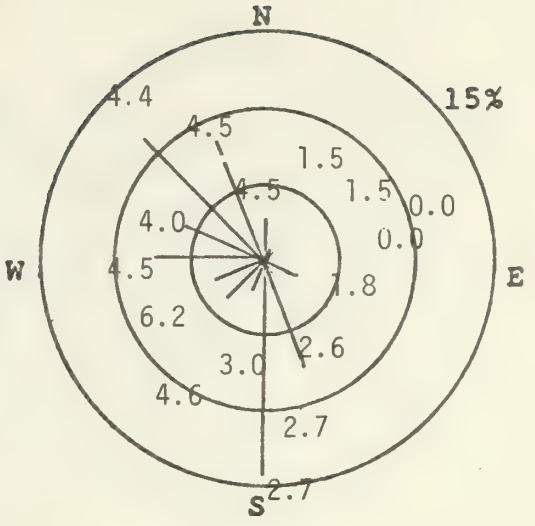
July 1978
Calm 21.0%
Total Hours 744



August 1978
Calm 21.4%
Total Hours 744

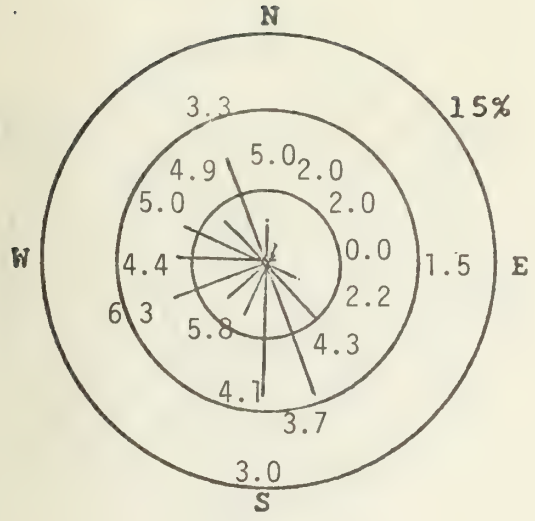


September 1978
Calm 14.6%
Total Hours 720

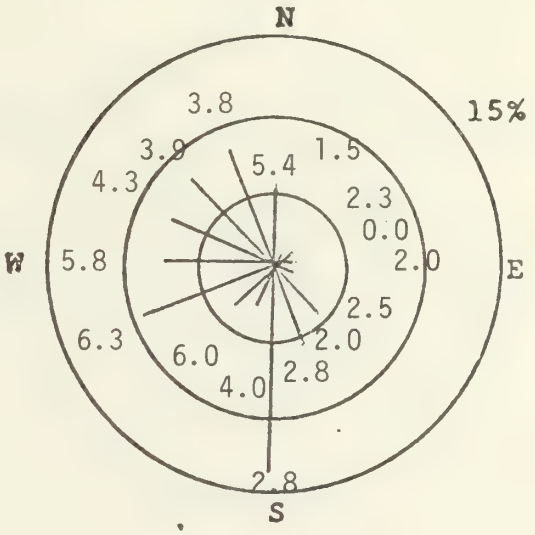


October 1978
Calm 22%
Total Hours 738

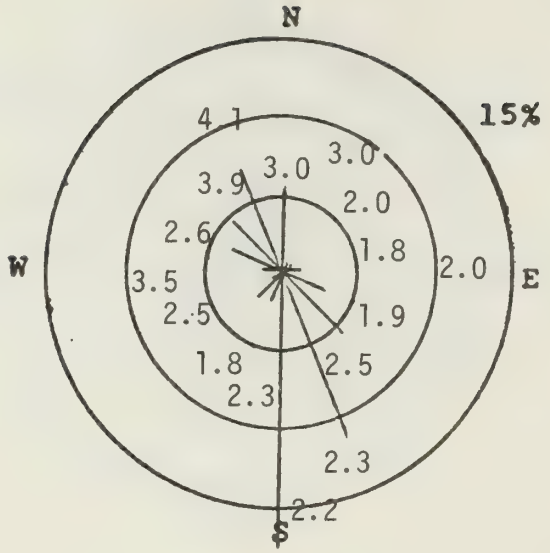
Monthly Wind Roses
FAA
Butte, Montana



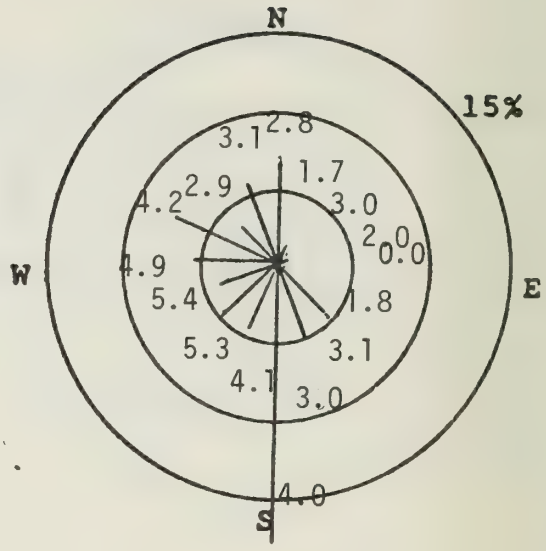
November 1978
Calm 34.5%
Total Hours 714



December 1978
Calm 22.2%
Total Hours 744

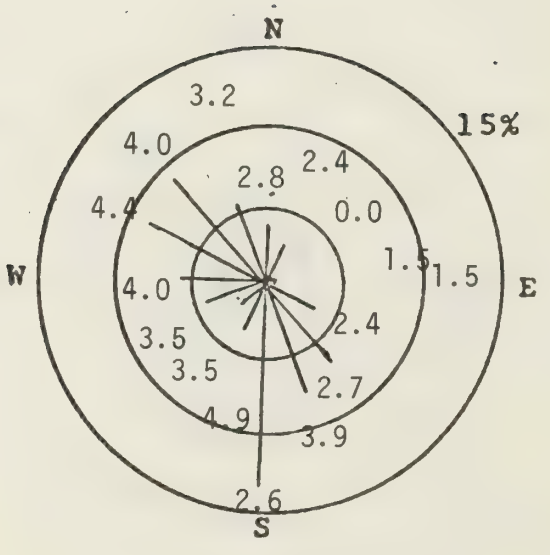


January 1979
Calm 35.9%
Total Hours 744

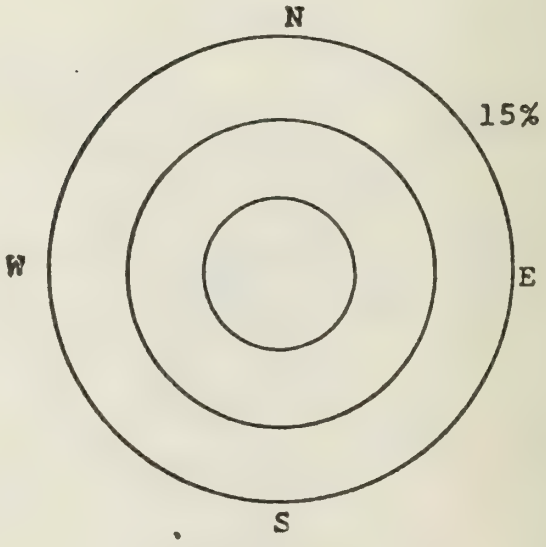


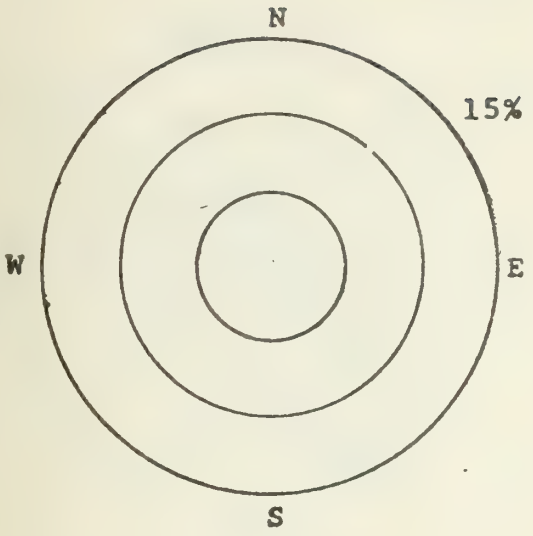
February 1979
Calm 29.0%
Total Hours 672

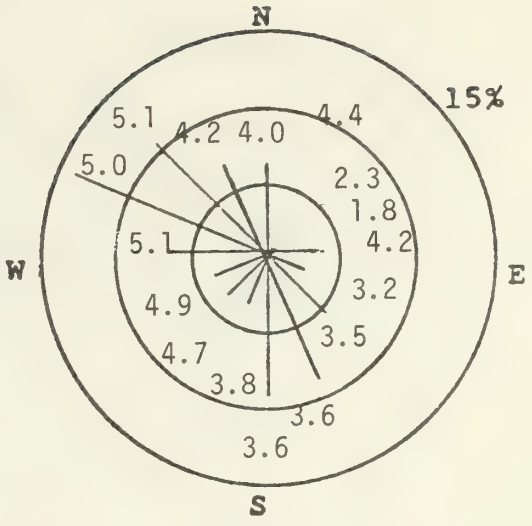
Monthly Wind Roses
FAA
Butte, Montana



March 1979
Calm 24.6%
Total Hours 744

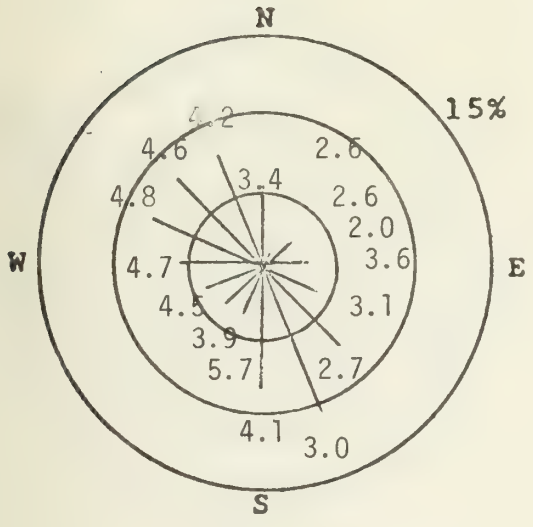




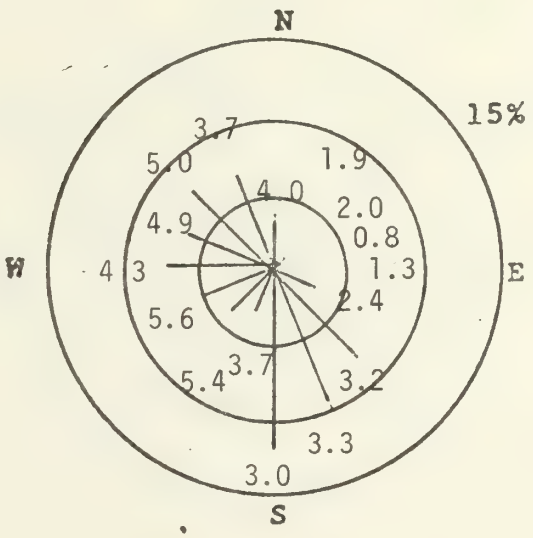


Spring 1978
Calm 16.3%
Total Hours 2208

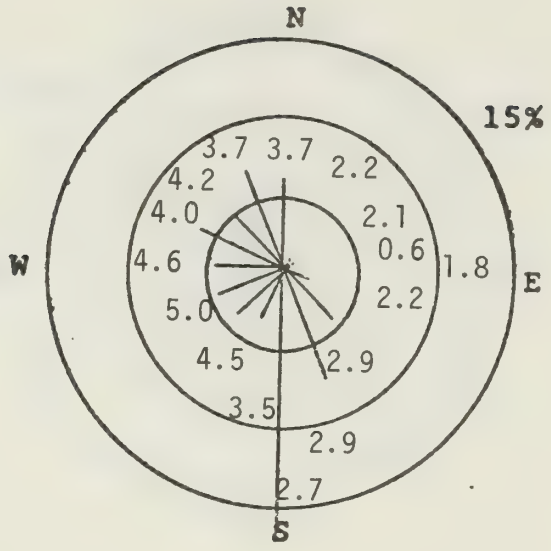
Seasonal Wind Roses
FAA
Butte, Montana

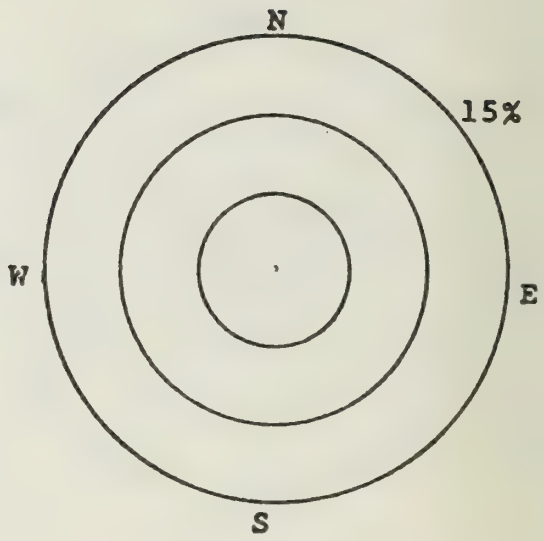


Summer 1978
Calm 18.1%
Total Hours 2205



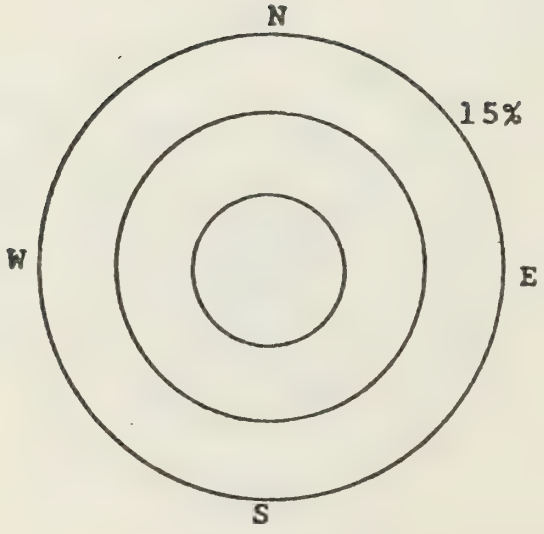
Autumn 1978
Calm 23.6%
Total Hours 2172

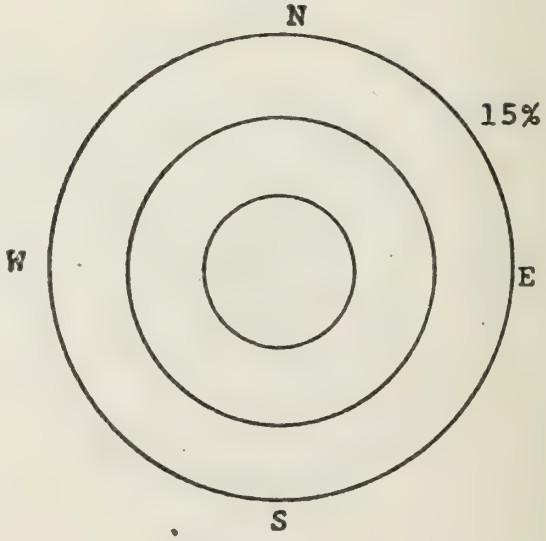


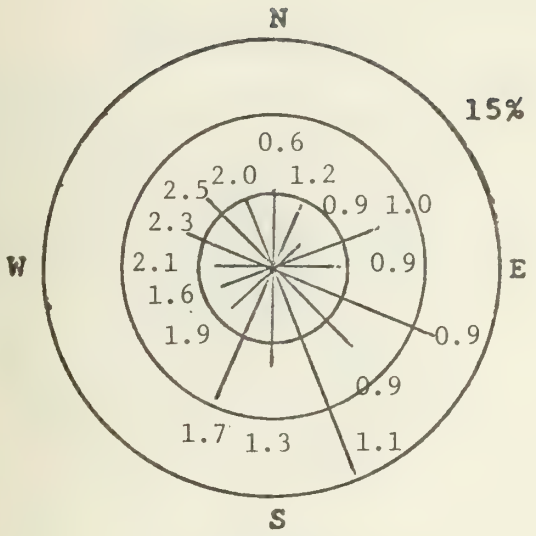


Winter 1978-1979
Calm 29.0%
Total Hours 2160

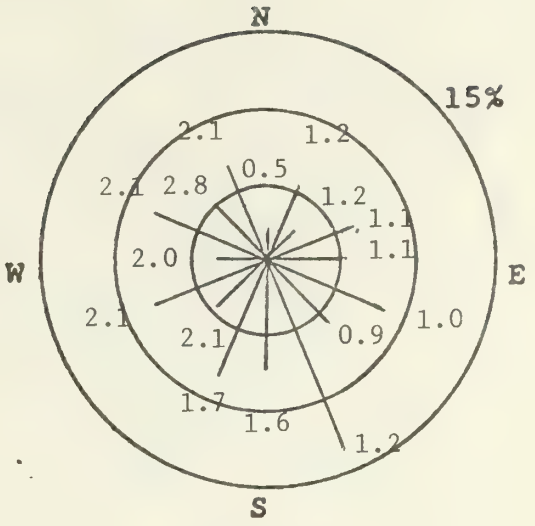
Seasonal Wind Roses
FAA
Butte, Montana





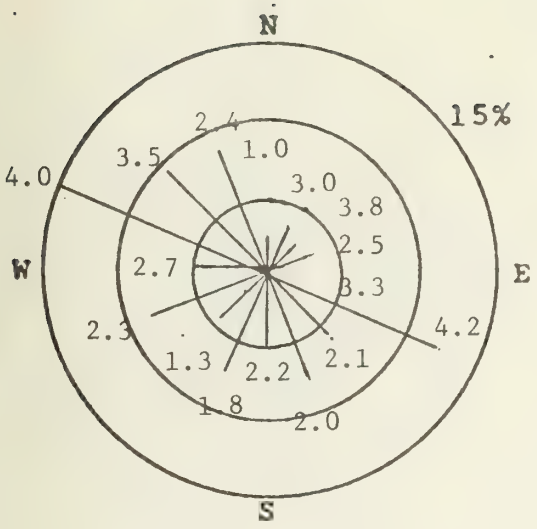


Jan. 1978
Calm 0.2%
Total Hours - 517

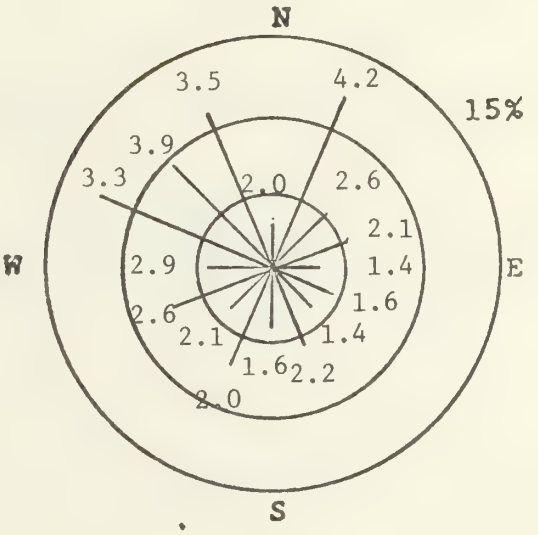


Feb. 1978
Calm 0.0%
Total Hours - 518

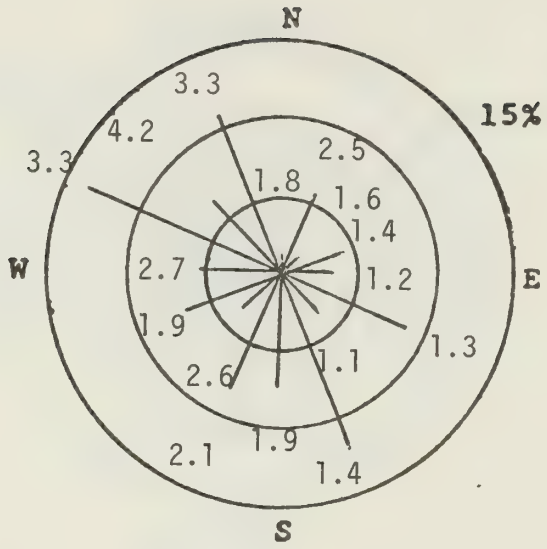
Monthly Wind Roses
Alpine West Site
Butte, MT



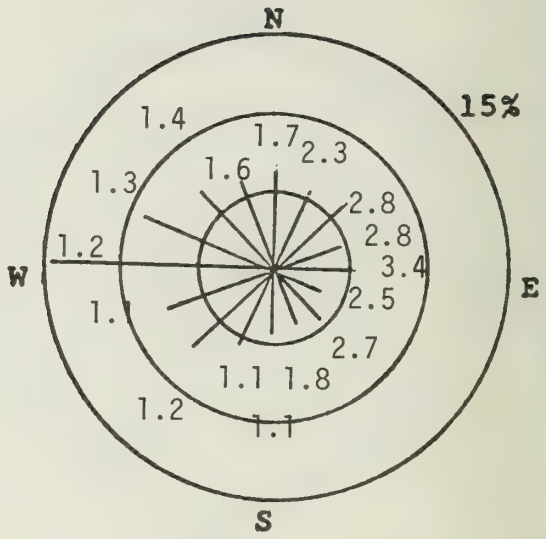
April 1978
Calm 0.0%
Total Hours - 469



May 1978
Calm 0.0%
Total Hours - 471

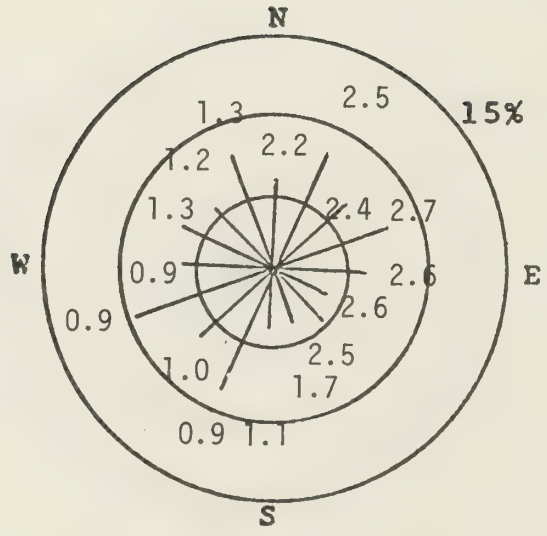


June 1978
Calm 0.0%
Total Hours 360

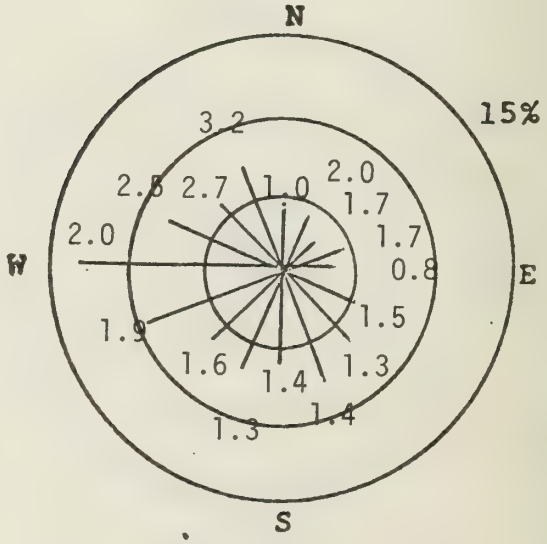


July 1978
Calm 0.0%
Total Hours 729

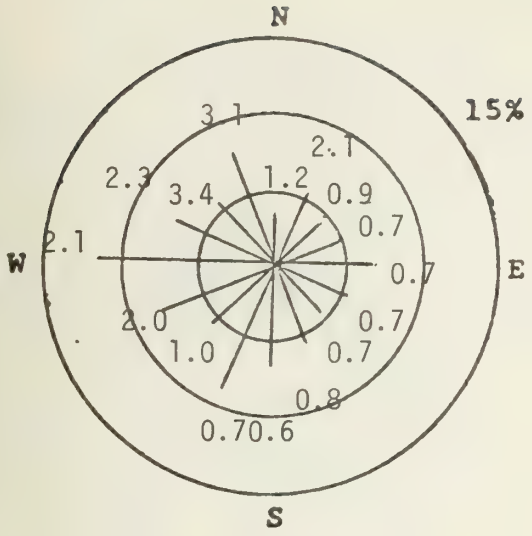
Monthly Wind Roses
Hebgen Park Site
Butte, Montana



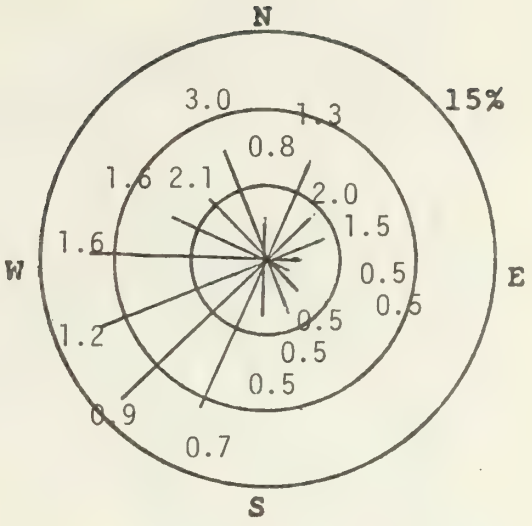
August 1978
Calm 0.0%
Total Hours 731



September 1978
Calm 0.0%
Total Hours 645

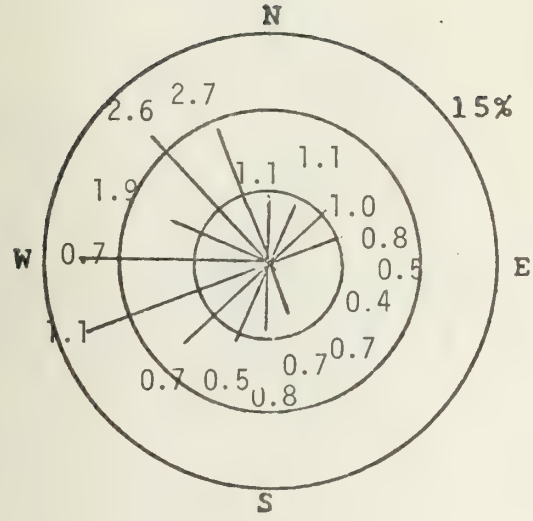


October 1978
Calm 0.0%
Total Hours 731

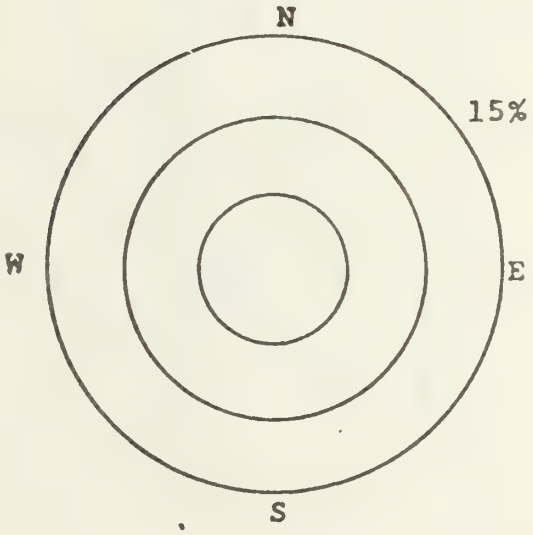


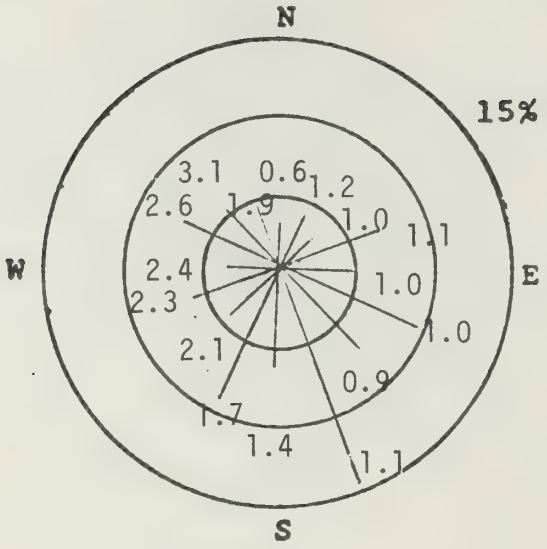
November 1978
Calm 0.0%
Total Hours 704

Monthly Wind Roses
Hebgen Park Site
Butte, Montana

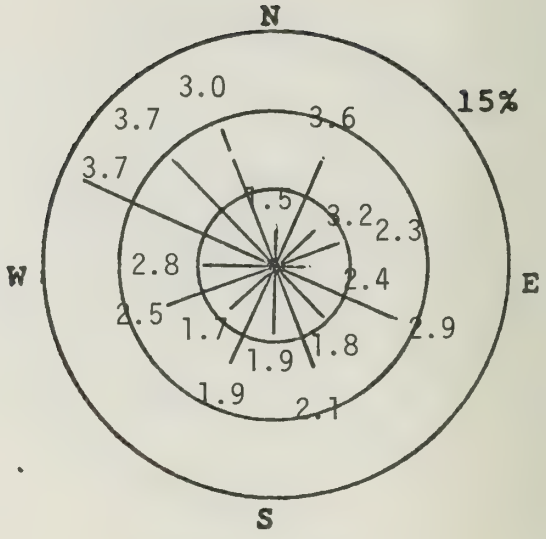


December 1978
Calm 5.8%
Total Hours 655





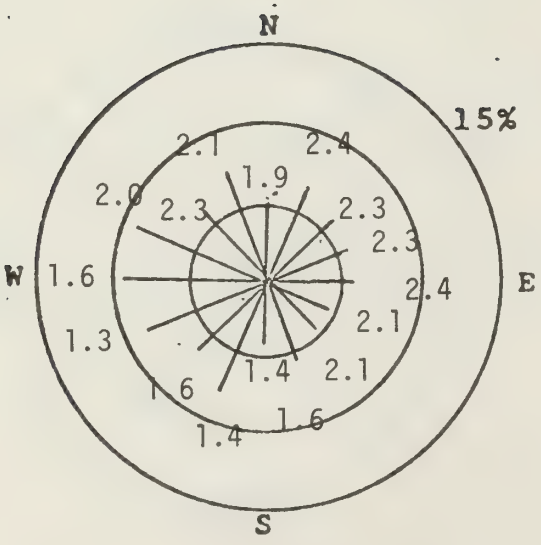
Winter 1977-78
Calm 0.1%
Total Hours 1585
Alpine West Site



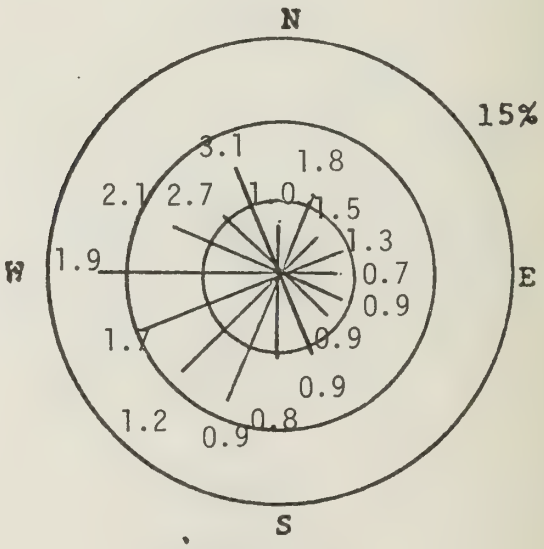
Spring 1978
Calm 0.0%
Total Hours 940
Alpine West Site

Seasonal Wind Roses

Butte, Montana



Summer 1978
Calm 0.0%
Total Hours 1820
Hebgen Park Site



Autumn 1978
Calm 0.2%
Total Hours 2080
Hebgen Park Site

SITE - BUTTE AIRPORT SITE
1978-79

AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - MORNING

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
			2.2	2.2	2.6	2.2	2.7	2.2	1.8	0.9			2.3	2.4		

AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - MORNING

			-0.5	--	-1.4	-0.6	-1.7	--	-0.5	-0.7			-0.6	-0.8		

PERCENT FREQUENCY OF SURFACE BASED FIRST INVERSIONS - MORNING

			87.5	100.0	80.0	85.7	81.8	100.0	83.3	45.5			89.3	88.5		

AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - AFTERNOON

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
			0.5	0.8	1.1	1.4	1.6	0.9	0.4	0.2			0.8	1.3		

AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - AFTERNOON

			-1.1	-1.1	-1.2	-2.1	-1.1	-0.7	-1.1	-0.8			-1.1	-1.3		

PERCENT FREQUENCY OF SURFACED BASED FIRST INVERSIONS - AFTERNOON

			0.0	0.0	11.1	22.2	36.4	25.0	12.5	0.0			4.8	29.2		

BUTTE-AIRPORT SITE
1978-1979

MORNINGMIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100				5	9	7	3	7	4	7	3			21	14		
101-250				1			1	3	1	2	2			1	5		
251-500				1		1	1	1	2	2	3			2	4		
501-750				1			1				1			1	1		
751-1000																	
1001-1500					1	1	1		2		2			2	3		
>1500						1				1				1			
Total				8	10	10	7	11	9	12	11			28	27		

MORNING MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100				62.5	90.0	70.0	42.9	63.6	44.4	58.3	27.3			75.0	51.9		
101-250				12.5			14.3	27.3	11.1	16.7	18.2			3.6	18.5		
251-500				12.5		10.0	14.3	9.1	22.2	16.7	27.3			7.1	14.8		
501-750				12.5			14.3				9.1			3.6	3.7		
751-1000																	
1001-1500					10.0	10.0	14.3		22.2		18.2			7.1	11.1		
>1500						10.0				8.3				3.6			
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)				2.1	2.1	2.5	3.9	1.8	4.5	2.0	2.7			2.2	3.4		

BUTTE-AIRPORT SITE
1978-1979

AFTERNOON MIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100						1	1	5	1					1	7		
101-250					1	4	4	3	2	1				5	9		
251-500					1	1	1	2		2				2	3		
501-750				2		1	1		1		1			3	2		
751-1000					1	1			2	1	1			2	2		
1001-1500				2	6	2	3		1	2	3			10	4		
>1500				4	2	1		1	1	6	2			7	2		
Total				8	11	11	10	11	8	12	7			30	29		

AFTERNOON MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100						9.1	10.0	45.5	12.5					3.3	24.1		
101-250					9.1	36.4	40.0	27.3	25.0	8.3				16.7	31.0		
251-500					9.1	9.1	10.0	18.2		16.7				6.7	10.3		
501-750				25.0		9.1	10.0		12.5		14.3			10.0	6.9		
751-1000					9.1	9.1			25.0	8.3	14.3			6.7	6.9		
1001-1500				25.0	54.6	18.2	30.0		12.5	16.7	42.9			33.3	13.8		
>1500				50.0	18.2	9.1		9.1	12.5	50.0	28.6			23.3	6.9		

AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)

				7.2	6.2	4.0	6.3	1.8	5.2	5.0	8.3			5.8	4.4		

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Butte
MONTH OR SEASON: Autumn 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	3.2			4.8	6.3	1.6	7.9	9.5				33.3
101-250	12.7				3.2	9.5	6.3					31.7
251-500	17.5			1.6	1.6		4.8	3.2				28.7
501-750	6.3											6.3
total	39.7			6.4	11.1	1.6	22.2	19.0				100.0

No Inversion 0.0

Total No. of Occurrences

Inversion Type												
1	1.6			1.6	4.8	1.6	14.3	7.9				31.8
2	3.2			1.6	1.6		6.3	4.8				17.5
3	25.4			1.6	4.8		1.6	6.3				39.7
4	9.5			1.6								11.1
5												

MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	1.8		1.8	5.4	7.3	1.8	5.5	16.4	1.8			41.8
101-250		1.8	1.8		1.8	3.6	16.4	9.1				34.5
251-500		1.8	3.6	1.8			1.8					9.0
501-750												
Total	1.8	3.6	7.2	7.2	9.1	5.4	23.7	25.5	1.8			85.3

No Inversion 14.5

Total No. of Occurrences

Inversion Type												
1	2.1		2.1	4.3	8.5	4.3	10.6	23.4	2.1			57.4
2			2.1			2.1	14.9	2.1				21.2
3		4.3	2.1	2.1	2.1		2.1	4.2				16.9
4			2.1	2.1								4.2
5												

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Butte
MONTH OR SEASON: Winter 1978-79 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	7.5			7.5	6.0	1.5	3.0	6.0	1.5			33.0
101-250	11.9	1.5		3.0	7.5	1.5	11.9	4.5				41.8
251-500	10.4	1.5	3.0	1.5			3.0					19.4
501-750	4.5											4.5
total	34.3	3.0	3.0	12.0	13.5	3.0	17.9	10.5	1.5			98.7

No Inversion 1.5

Total No. of Occurrences

Inversion Type												
1		1.5		6.1	9.1	1.5	13.6	9.1	1.5			42.4
2	7.6			6.1	3.0	1.5	1.5	1.5				21.2
3	12.1		3.0		1.5		3.0					19.6
4	15.2	1.5										16.7
5												

MONTH OR SEASON: AFTERNOON

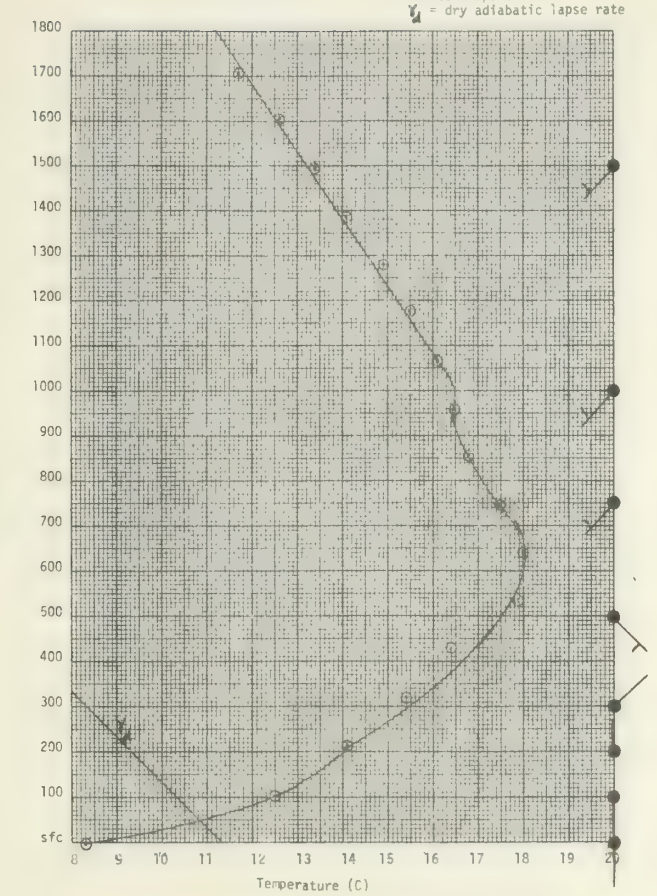
THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	2.7	1.4	2.7	8.2	8.2	1.4	6.8	15.1	1.4			47.9
101-250	1.4	6.8	4.1	1.4	2.7	4.1	6.8	2.7				30.0
251-500	4.1	4.1				2.7		2.7				13.6
501-750	1.4											1.4
Total	9.6	12.3	6.8	9.6	10.9	8.2	13.6	20.5	1.4			92.9

No Inversion 6.8

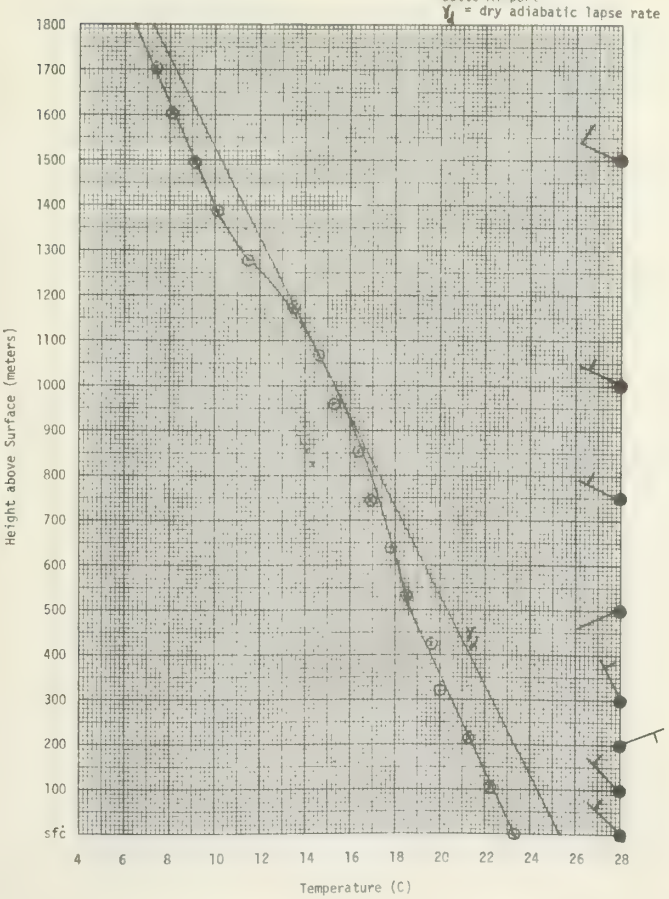
Total No. of Occurrences

Inversion Type												
1		1.5	2.9	1.5	7.4	1.5	8.8	13.2	1.5			38.3
2	2.9	1.5	2.9	5.9	4.4	4.4	5.9	8.8				36.7
3	5.9	7.4	1.5	2.9		2.9						20.6
4	1.5	2.9										4.4
5												

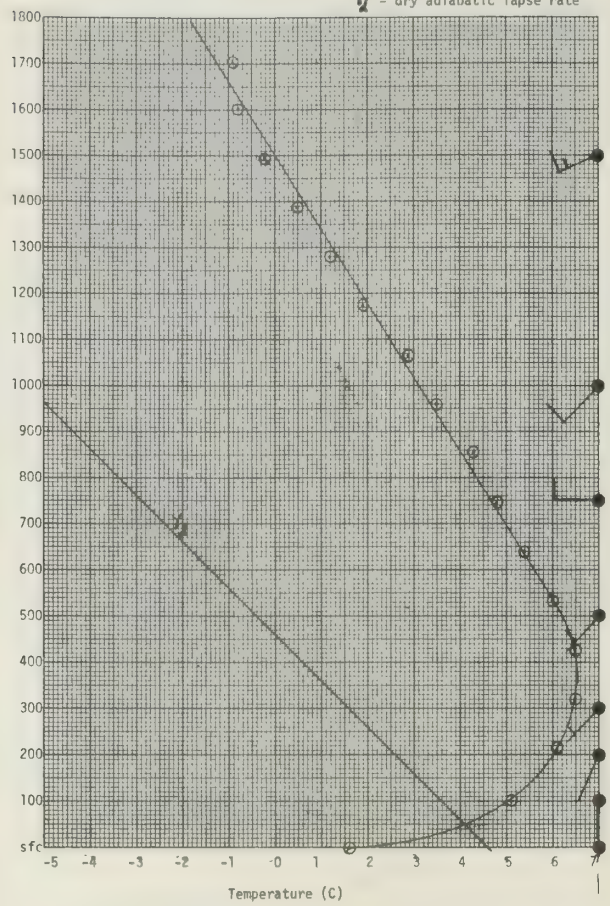
August 1978
Morning Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate



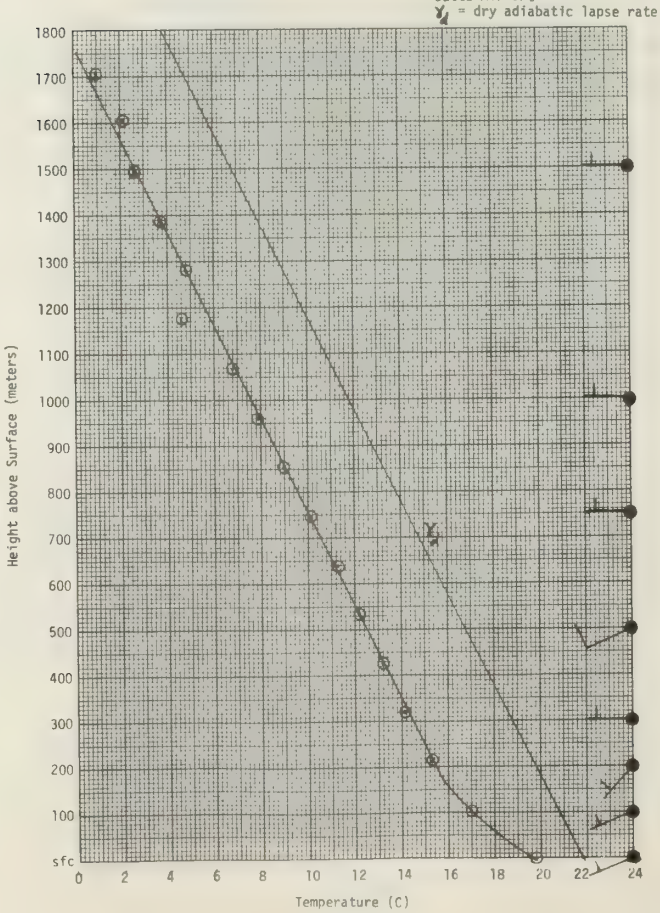
August 1978
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate



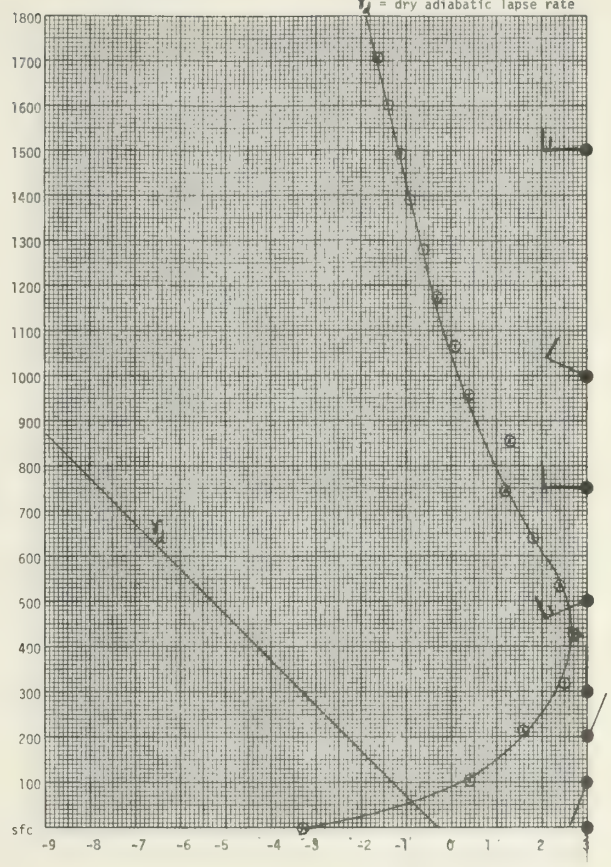
September 1978
Morning Monthly Average
Upper Air Sounding
Butte Airport
= dry adiabatic lapse rate



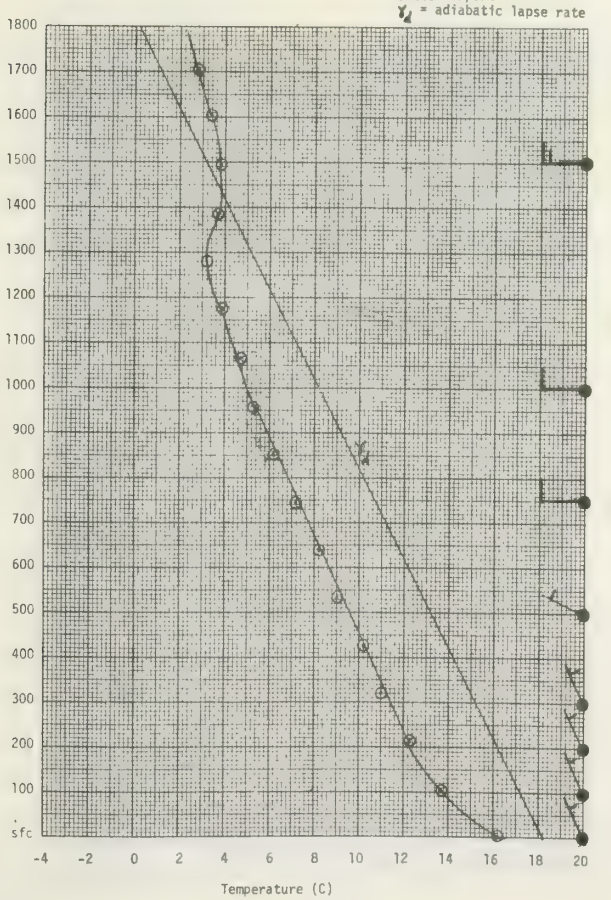
September 1978
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
= dry adiabatic lapse rate



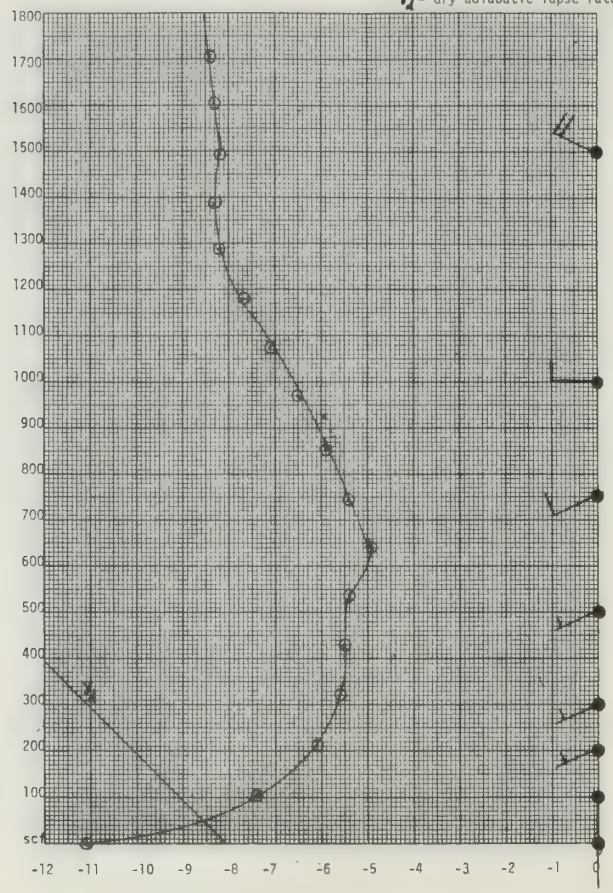
October 1978
Morning Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate



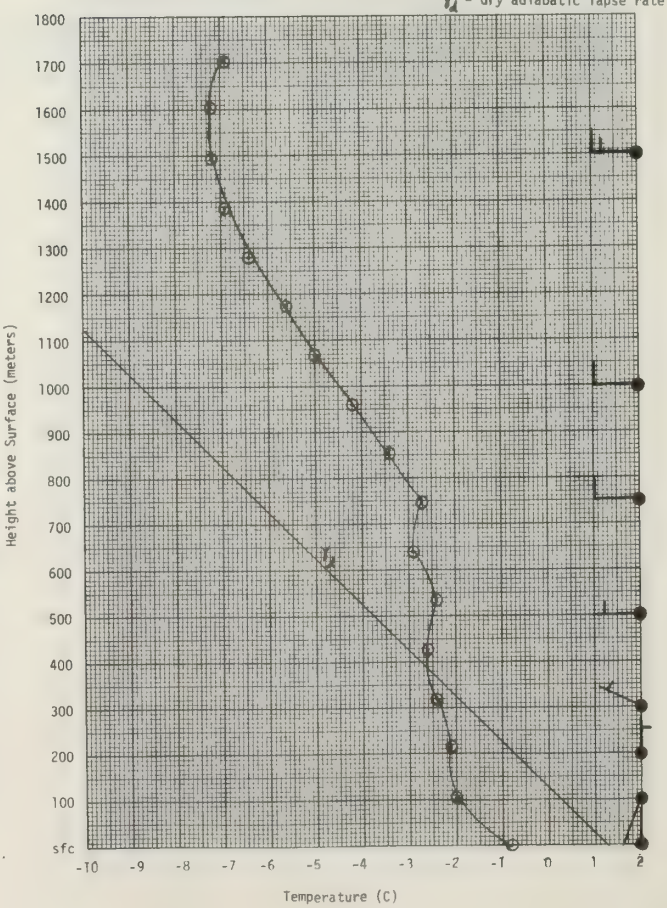
October 1978
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
γ_d = adiabatic lapse rate



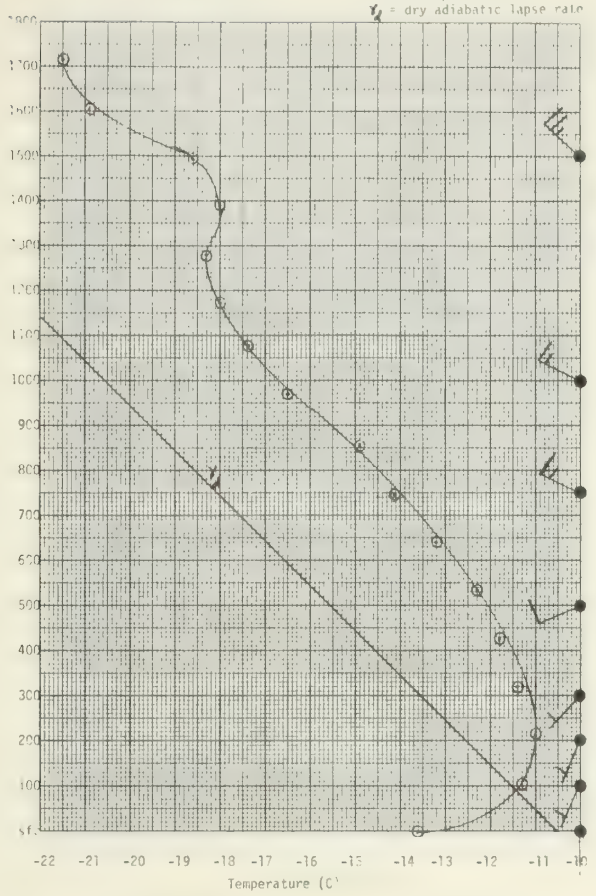
November 1978
Morning Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate



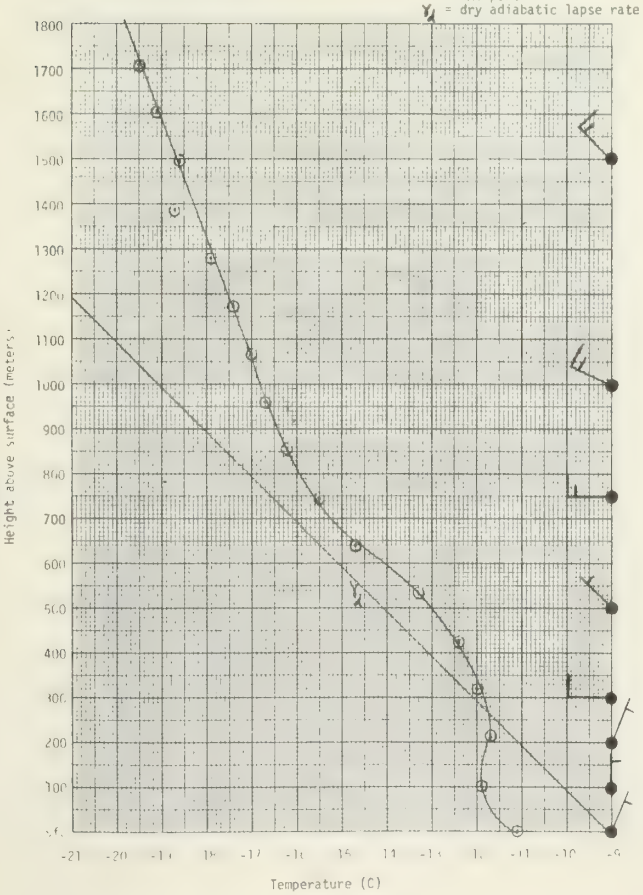
November 1978
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate

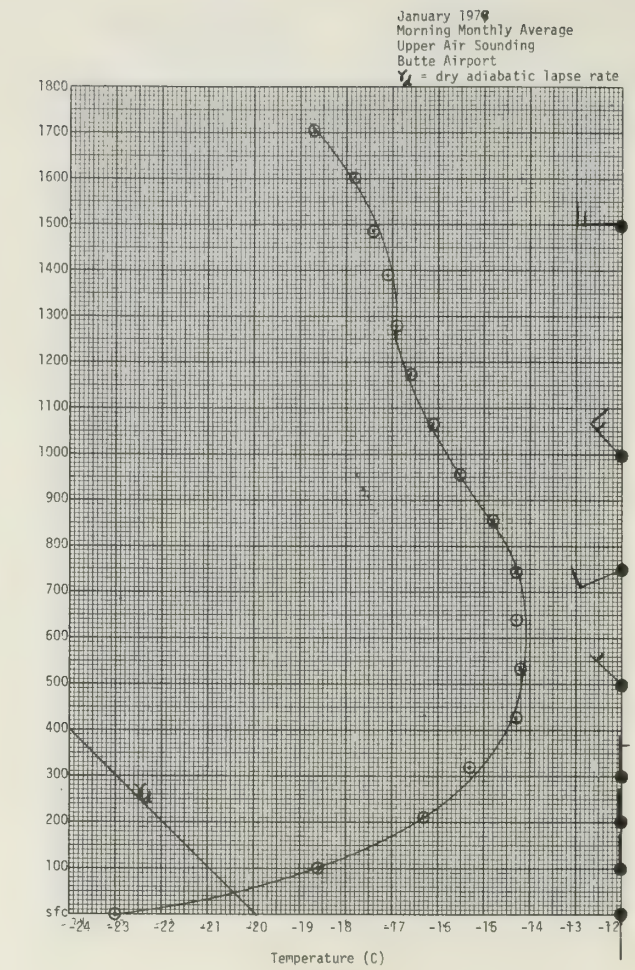


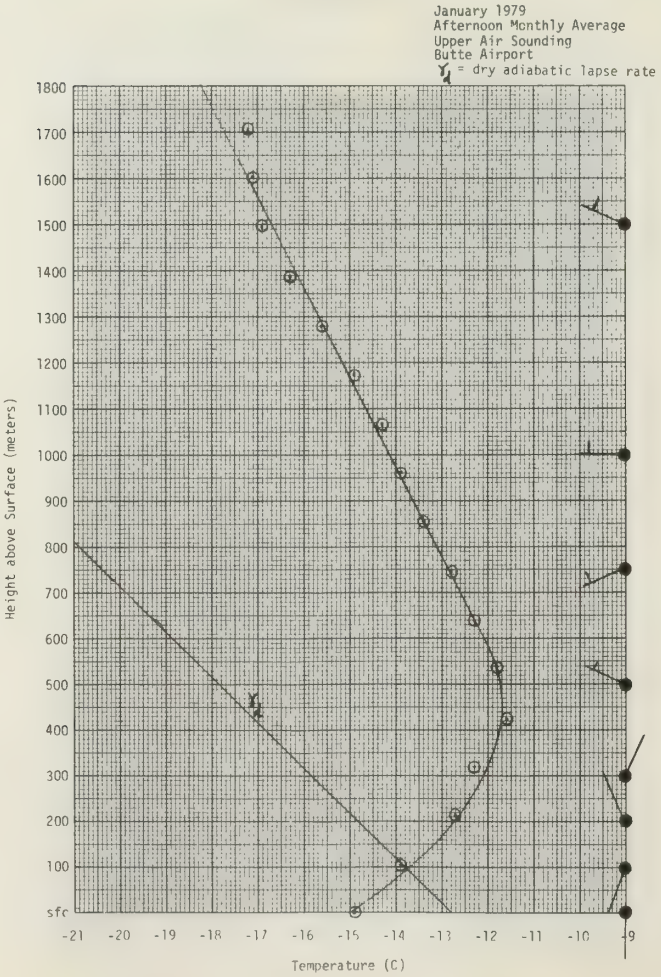
December 1978
Morning Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate



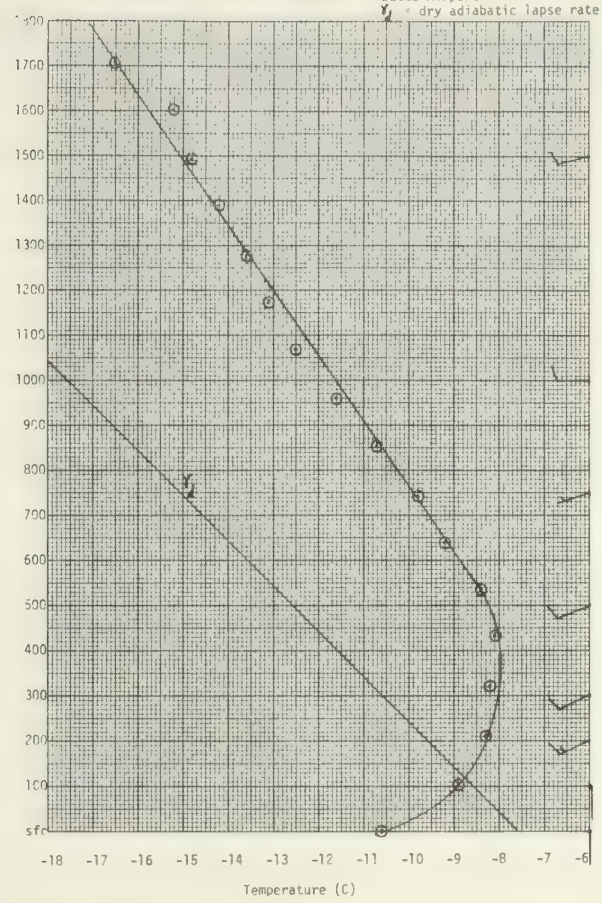
December 1978
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate



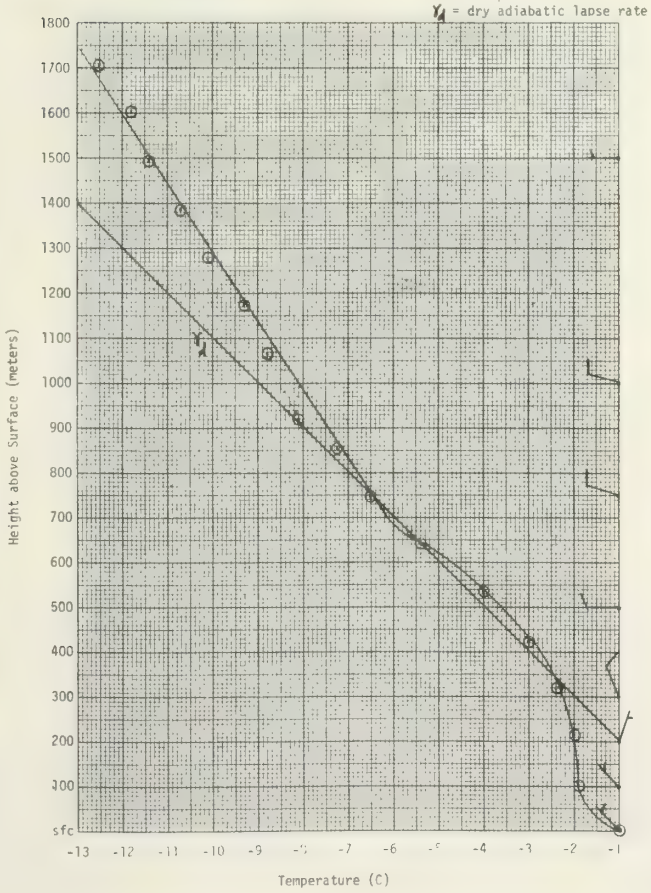

January 1979
Morning Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-24 -23 -22 -21 -20 -19 -18 -17 -16 -15 -14 -13 -12
Temperature (C)


January 1979
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
γ_d = dry adiabatic lapse rate
Height above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9
Temperature (C)

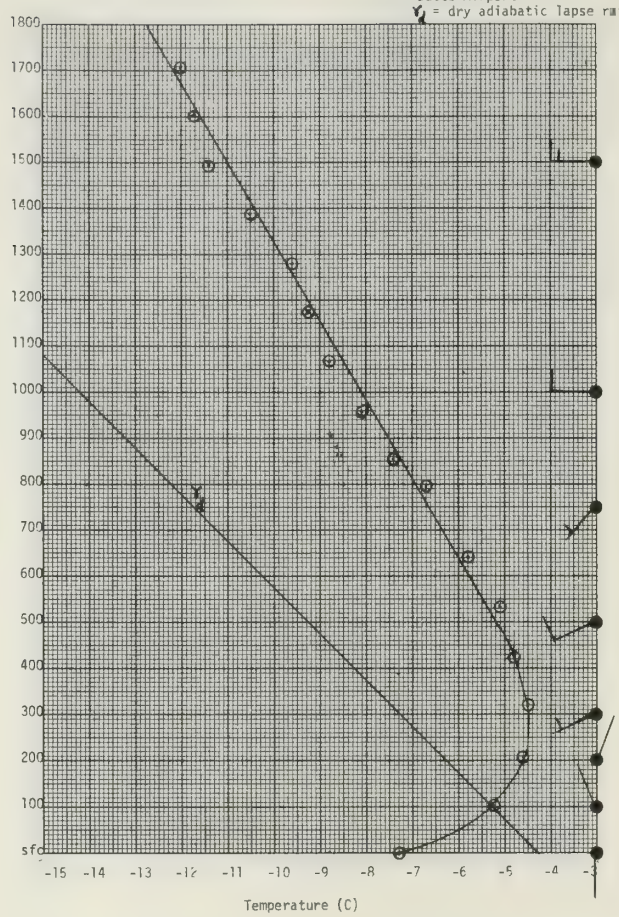
February 1979
Morning Monthly Averages
Upper Air Soundings
Butte Airport
= dry adiabatic lapse rate



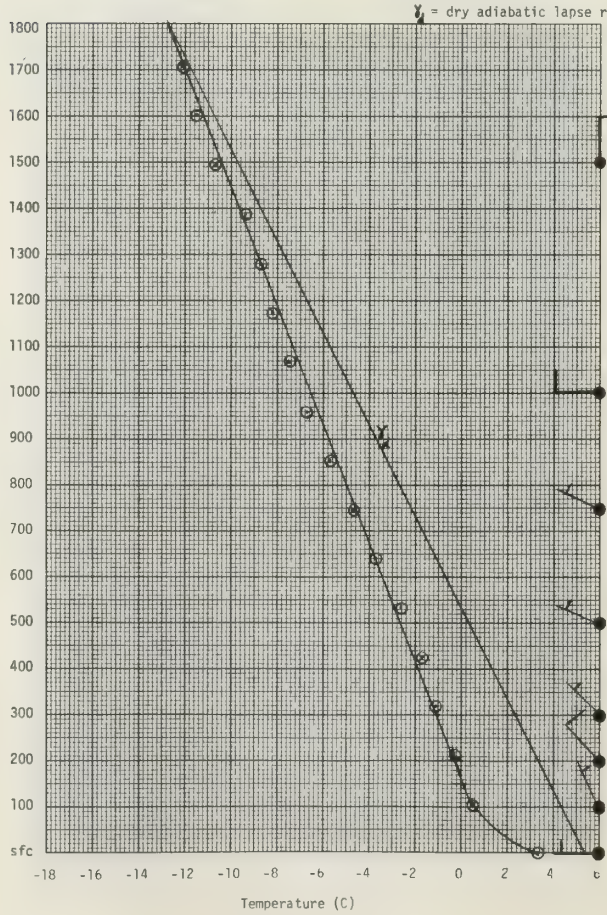
February 1979
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
= dry adiabatic lapse rate



March 1979
Morning Monthly Average
Upper Air Sounding
Butte Airport
= dry adiabatic lapse rate



March 1979
Afternoon Monthly Average
Upper Air Sounding
Butte Airport
= dry adiabatic lapse rate



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	1.2
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	.9
ESE	9.0						1	9.0	.9
SE	9.0						1	9.0	.4
SSE	9.0						1	9.0	.9
S	18.1						2	18.1	1.1
SSW	27.2						3	27.2	.6
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	9.0						1	9.0	1.3
CALM							0	0.0	
COL. TOTALS	99.3						11		.9

SURFACE WINDS AFTERNOON MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	16.6	33.3					3	49.9	3.9
SE	16.6						1	16.6	2.2
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			16.6				1	16.6	6.7
NW		16.6					1	16.6	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	49.9	16.6				6		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.9
ENE							0	0.0	
E	18.1						2	18.1	.8
ESE							0	0.0	
SE	9.6						1	9.0	.7
SSE	9.0						1	9.0	2.9
S	27.2						3	27.2	1.5
SSW	18.1						2	18.1	2.3
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		9.0					1	9.0	3.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	90.4	9.0					11		1.8

100 METER LEVEL WINDS AFTERNOON MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	33.3						2	33.3	2.7
SE	33.3						2	33.3	1.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW		16.6					1	16.6	5.3
NW		16.6					1	16.6	4.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	33.2					6		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	18.1						2	18.1	1.4
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	2.1
SW							0	0.0	
WSW							0	0.0	
W		9.0					1	9.0	4.4
WNW	9.0						1	9.0	1.3
NW	27.2	9.0					4	36.2	2.0
NNW	9.0						1	9.0	2.2
CALM							0	0.0	
COL. TOTALS	81.3	18.0					11		2.1

200 METER LEVEL WINDS AFTERNOON MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	16.6						1	16.6	2.0
SE	16.6	16.6					2	33.2	2.6
SSE		16.6					1	16.6	4.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW		16.6		16.6			2	33.2	8.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	49.8		16.6			6		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.3
NNE							0	0.0	
NE	9.0						1	9.0	.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	9.0	9.0					2	18.0	1.8
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0						1	9.0	.2
WSW							0	0.0	
W		9.0					1	9.0	4.6
WNW							0	0.0	
NW	18.1	18.1					4	36.2	3.1
NNW	9.0						1	9.0	.5
CALM							0	0.0	
COL. TOTALS	63.1	36.1					11		2.2

300 METER LEVEL WINDS AFTERNOON MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	16.6						1	16.6	1.8
ESE							0	0.0	
SE		16.6	16.6				2	33.2	5.1
SSE		16.6					1	16.6	3.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	16.6				16.6		2	33.2	9.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	33.2	16.6		16.6		6		5.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING — MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	.2
NE							0	0.0	
ENE	9.0						1	9.0	2.9
E							0	0.0	
ESE							0	0.0	
SE		18.1					2	18.1	3.7
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	3.4
SW		9.0					1	9.0	3.2
WSW							0	0.0	
W							0	0.0	
WNW	18.1	9.0					3	27.1	3.0
NW							0	0.0	
NNW	9.0	9.0					2	18.0	3.0
CALM							0	0.0	
COL. TOTALS	45.1	54.1					11		2.9

500 METER LEVEL WINDS AFTERNOON — MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						1	16.6	2.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	16.6						1	16.6	1.3
ESE							0	0.0	
SE				16.6			1	16.6	10.1
SSE		16.6					1	16.6	5.2
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	16.6						1	16.6	1.5
WNW					16.6		1	16.6	24.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	16.6		16.6	16.6		6		7.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING — MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.1
ENE							0	0.0	
E		9.0					1	9.0	5.4
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	5.1
S							0	0.0	
SSW			9.0				1	9.0	5.7
SW		9.0	9.0				2	18.0	5.5
WSW							0	0.0	
W		9.0					1	9.0	4.5
WNW			9.0				1	9.0	7.0
NW	9.0	9.0					2	18.0	3.2
NNW			9.0				1	9.0	7.4
CALM							0	0.0	
COL. TOTALS	18.0	45.0	36.0				11		5.2

750 METER LEVEL WINDS AFTERNOON — MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		16.6					1	16.6	3.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				16.6			1	16.6	10.2
SSE							0	0.0	
S							0	0.0	
SSW	16.6						1	16.6	1.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	16.6			16.6			2	33.2	5.1
NNW			16.6				1	16.6	6.0
CALM							0	0.0	
COL. TOTALS	33.2	16.6	16.6	33.2			6		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					1	11.1	5.5
S							0	0.0	
SSW							0	0.0	
SW		11.1		11.1			2	22.2	9.6
WSW			22.2				2	22.2	7.4
W							0	0.0	
WNW		11.1	11.1				2	22.2	7.6
NW			11.1	11.1			2	22.2	8.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	44.4	22.2			9		7.9

1000 METER LEVEL WINDS AFTERNOON MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		20.0					1	20.0	3.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				20.0			1	20.0	15.7
SSE							0	0.0	
S		20.0					1	20.0	4.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	20.0		20.0				2	40.0	5.6
CALM							0	0.0	
COL. TOTALS	20.0	40.0	20.0	20.0			5		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		11.1					1	11.1	5.6
SW				11.1			1	11.1	11.8
WSW		11.1					1	11.1	4.4
W			11.1		11.1		2	22.2	11.9
WNW			11.1		11.1		2	22.2	13.2
NW		11.1	11.1				2	22.2	7.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	33.3	11.1	22.2		9		9.6

1500 METER LEVEL WINDS AFTERNOON MAY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			20.0				1	20.0	6.0
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		20.0	20.0				2	40.0	5.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	20.0						1	20.0	1.8
WNW							0	0.0	
NW			20.0				1	20.0	6.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	60.0				5		4.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING MAY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		11.1	11.1		11.1		3	33.3	11.0
WSW				11.1			1	11.1	10.1
W				11.1			1	11.1	12.5
WNW			11.1		11.1		2	22.2	15.4
NW	11.1				11.1		2	22.2	9.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	22.2	22.2	33.3		9		11.6

2000 METER LEVEL WINDS AFTERNOON MAY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			25.0				1	25.0	7.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			25.0				1	25.0	6.5
WSW							0	0.0	
W	25.0						1	25.0	2.8
WNW							0	0.0	
NW							0	0.0	
NNW			25.0				1	25.0	6.1
CALM							0	0.0	
COL. TOTALS	25.0		75.0				4		5.7

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MAY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	6	0
101- 250	2	0
251- 500	1	0
501- 750	0	0
751-1000	1	0
1001-1500	0	1
>1500	1	5
TOTAL	11	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	1.9	6.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.76	-01.95

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF MAY 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			3.4	13.7			3.4		3.4			23.5
101-250	20.6		6.8	3.4	3.4	3.4	13.7	13.7				65.0
251-500	10.3											10.3
501-750												
TOTAL	30.9		10.2	17.1	3.4	3.4	17.1	13.7	3.4			
NO INVERSION												0.0

TOTAL NO. OF OCCURENCES 29

INVERSION TYPE											
1	3.4			13.7	3.4	3.4	6.8	10.3			41.0
2	3.4		10.3	3.4			10.3	3.4			30.8
3	17.2								3.4		20.6
4	6.8										6.8
5											

MONTH OF MAY 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			10.0	10.0	10.0		20.0	10.0				60.0
101-250				10.0			10.0	10.0				30.0
251-500												
501-750												
TOTAL			10.0	20.0	10.0		30.0	20.0				
NO INVERSION												10.0

TOTAL NO. OF OCCURENCES 9

INVERSION TYPE											
1				22.2	11.1			22.2			55.5
2			11.1				33.3				44.4
3											
4											
5											

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING JUNE,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	1.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	18.1						2	18.1	1.8
SE	9.0						1	9.0	1.3
SSE	36.3						4	36.3	1.7
S	18.1						2	18.1	2.2
SSW							0	0.0	
SW	9.0						1	9.0	1.3
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.5						11		1.7

SURFACE WINDS AFTERNOON JUNE,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		9.0	9.0				2	18.0	5.3
SE		9.0					1	9.0	4.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	18.1	9.0		9.0			4	36.1	4.8
W							0	0.0	
WNW	9.0						1	9.0	2.0
NW							0	0.0	
NNW		18.1	9.0				3	27.1	6.5
CALM							0	0.0	
COL. TOTALS	27.1	45.1	18.0	9.0			11		5.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	.3
ESE							0	0.0	
SE	9.0						1	9.0	.6
SSE	9.0						1	9.0	.7
S	36.3						4	36.3	1.5
SSW	18.1						2	18.1	1.2
SW							0	0.0	
WSW		9.0					1	9.0	3.5
W		9.0					1	9.0	5.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.4	18.0					11		1.7

100 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	2.9
ESE							0	0.0	
SE				9.0			1	9.0	10.7
SSE		9.0					1	9.0	4.2
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0			9.0		2	18.0	12.6
W		9.0					1	9.0	3.3
WNW	9.0	9.0					2	18.0	3.2
NW	18.1						2	18.1	1.7
NNW	9.0						1	9.0	2.7
CALM							0	0.0	
COL. TOTALS	45.1	36.0		9.0	9.0		11		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.0
NNE	18.1						2	18.1	1.2
NE							0	0.0	
ENE							0	0.0	
E	18.1						2	18.1	.7
ESE							0	0.0	
SE	9.0						1	9.0	1.0
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	2.6
SW							0	0.0	
WSW							0	0.0	
W			9.0				1	9.0	7.2
WNW	18.1						2	18.1	.8
NW	9.0						1	9.0	2.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.3	9.0	9.0				11		1.9

200 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		9.0					1	9.0	5.3
E							0	0.0	
ESE							0	0.0	
SE	9.0		9.0				2	18.0	5.4
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			9.0	9.0			2	18.0	9.8
W		9.0					1	9.0	5.5
WNW	9.0						1	9.0	1.6
NW		9.0	9.0				2	18.0	6.0
NNW	9.0	9.0					2	18.0	3.2
CALM							0	0.0	
COL. TOTALS	27.0	36.0	27.0	9.0			11		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	.5
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	1.2
ESE	10.0						1	10.0	.9
SE							0	0.0	
SSE	20.0						2	20.0	2.0
S	10.0						1	10.0	.9
SSW	10.0						1	10.0	1.6
SW							0	0.0	
WSW							0	0.0	
W			10.0				1	10.0	7.0
WNW	10.0						1	10.0	2.5
NW							0	0.0	
NNW		10.0					1	10.0	3.1
CALM							0	0.0	
COL. TOTALS	80.0	10.0	10.0				10		2.1

300 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE			9.0				1	9.0	6.0
E							0	0.0	
ESE							0	0.0	
SE		9.0		9.0			2	18.0	9.0
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0				9.0	2	18.0	17.8
W							0	0.0	
WNW		9.0					1	9.0	5.8
NW	9.0	9.0			9.0		3	27.0	7.4
NNW	18.1						2	18.1	1.9
CALM							0	0.0	
COL. TOTALS	27.1	36.0	9.0	9.0	9.0	9.0	11		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	3.4
NNE							0	0.0	
NE							0	0.0	
ENE	10.0						1	10.0	1.0
E							0	0.0	
ESE							0	0.0	
SE	10.0	10.0					2	20.0	3.6
SSE							0	0.0	
S		10.0					1	10.0	3.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0		20.0				3	30.0	5.4
WNW	10.0						1	10.0	.9
NW							0	0.0	
NNW	10.0						1	10.0	1.6
CALM							0	0.0	
COL. TOTALS	50.0	30.0	20.0				10		3.4

500 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		9.0		9.0			2	18.0	9.9
E							0	0.0	
ESE							0	0.0	
SE			18.1				2	18.1	8.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	9.0						1	9.0	1.6
WNW		9.0	9.0				2	18.0	5.2
NW		18.1	18.1				4	36.2	5.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	36.1	45.2	9.0			11		6.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	4.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			20.0				2	20.0	7.7
SE			10.0				1	10.0	7.1
SSE							0	0.0	
S			10.0				1	10.0	6.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					10.0		1	10.0	16.1
WNW		10.0	10.0				2	20.0	5.4
NW			10.0				1	10.0	7.1
NNW	10.0						1	10.0	.3
CALM							0	0.0	
COL. TOTALS	10.0	20.0	60.0		10.0		10		6.7

750 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.7
E							0	0.0	
ESE							0	0.0	
SE					9.0		1	9.0	17.7
SSE		9.0					1	9.0	5.1
S							0	0.0	
SSW							0	0.0	
SW		9.0					1	9.0	4.4
WSW		9.0	9.0				2	18.0	5.1
W							0	0.0	
WNW			9.0				1	9.0	8.2
NW	9.0	18.1	9.0				4	36.1	5.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	45.1	27.0		9.0		11		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		20.0					2	20.0	4.8
SE				10.0			1	10.0	11.6
SSE							0	0.0	
S			10.0				1	10.0	6.6
SSW			10.0				1	10.0	8.4
SW							0	0.0	
WSW							0	0.0	
W	10.0				10.0		2	20.0	13.0
WNW			10.0				1	10.0	7.2
NW		10.0					1	10.0	5.6
NNW		10.0					1	10.0	5.0
CALM							0	0.0	
COL. TOTALS	10.0	40.0	30.0	10.0	10.0		10		8.0

1000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				10.0			1	10.0	11.4
SSW							0	0.0	
SW		10.0					1	10.0	4.4
WSW		10.0	10.0	10.0			3	30.0	6.7
W							0	0.0	
WNW				10.0			2	20.0	11.9
NW			10.0		10.0		2	20.0	11.9
NNW			10.0				1	10.0	6.9
CALM							0	0.0	
COL. TOTALS		20.0	40.0	30.0	10.0		10		9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		12.5					1	12.5	3.9
S			12.5				1	12.5	8.2
SSW				12.5			1	12.5	15.1
SW							0	0.0	
WSW		12.5		12.5			2	25.0	6.7
W							0	0.0	
WNW				12.5			1	12.5	10.3
NW							0	0.0	
NNW		12.5	12.5				2	25.0	6.5
CALM							0	0.0	
COL. TOTALS		37.5	25.0	37.5			8		7.9

1500 METER LEVEL WINDS AFTERNCON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		11.1					1	11.1	3.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	7.8
SSW		11.1					1	11.1	3.6
SW				11.1			1	11.1	10.7
WSW			11.1				1	11.1	6.0
W				11.1			1	11.1	11.9
WNW				22.2	11.1		3	33.3	17.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		22.2	22.2	44.4	11.1		9		10.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5						1	12.5	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			12.5		12.5		2	25.0	12.3
SW							0	0.0	
WSW		12.5					1	12.5	5.3
W	12.5			12.5			2	25.0	7.3
WNW							0	0.0	
NW				12.5			1	12.5	14.6
NNW			12.5				1	12.5	7.6
CALM							0	0.0	
COL. TOTALS	25.0	12.5	25.0	25.0	12.5		8		8.5

2000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	12.5	12.5	12.5				3	37.5	4.5
SW							0	0.0	
WSW				12.5			1	12.5	12.1
W				12.5			1	12.5	11.4
WNW					12.5	25.0	3	37.5	26.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	12.5	12.5	25.0	12.5	25.0	8		14.6

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JUNE 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	1.3
ESE	10.0						1	10.0	1.3
SE							0	0.0	
SSE	10.0						1	10.0	1.3
S	20.0						2	20.0	1.5
SSW	10.0						1	10.0	1.3
SW	20.0						2	20.0	.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	20.0						2	20.0	1.3
CALM							0	0.0	
COL. TOTALS	100.0						10		1.2

SURFACE WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	2.2
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		9.0					1	9.0	3.6
SSW							0	0.0	
SW	9.0						1	9.0	2.2
WSW	18.1	9.0					3	27.1	2.5
W		9.0					1	9.0	4.5
WNW	9.0	18.1					3	27.1	4.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	54.1	45.1					11		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	1.7
SE							0	0.0	
SSE	10.0						1	10.0	1.1
S	20.0						2	20.0	1.0
SSW	40.0						4	40.0	2.0
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	10.0	10.0					2	20.0	2.2
CALM							0	0.0	
COL. TOTALS	90.0	10.0					10		1.7

100 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0		9.0				2	18.0	4.7
NNE	9.0						1	9.0	2.0
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	2.3
SE							0	0.0	
SSE		9.0					1	9.0	3.1
S	9.0						1	9.0	1.8
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	4.0
W	9.0		9.0				2	18.0	4.4
WNW				9.0			1	9.0	10.0
NW							0	0.0	
NNW		9.0					1	9.0	5.0
CALM							0	0.0	
COL. TOTALS	45.0	27.0	18.0	9.0			11		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	1.8
ENE							0	0.0	
E	10.0						1	10.0	.9
ESE							0	0.0	
SE		10.0					1	10.0	3.7
SSE	20.0	10.0					3	30.0	1.8
S	10.0						1	10.0	1.5
SSW							0	0.0	
SW	20.0						2	20.0	1.1
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW			10.0				1	10.0	6.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	70.0	20.0	10.0				10		2.2

200 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	9.0	9.0					2	18.0	2.6
SSE							0	0.0	
S	9.0	9.0					2	18.0	3.1
SSW							0	0.0	
SW							0	0.0	
WSW	9.0						1	9.0	1.7
W	9.0						1	9.0	1.4
WNW		9.0		9.0			2	18.0	8.0
NW		9.0					1	9.0	3.3
NNW	9.0						1	9.0	2.9
CALM							0	0.0	
COL. TOTALS	54.0	36.0		9.0			11		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	.3
ESE	10.0						1	10.0	.4
SE		10.0					1	10.0	4.2
SSE							0	0.0	
S	20.0						2	20.0	1.4
SSW	10.0						1	10.0	1.7
SW							0	0.0	
WSW	20.0						2	20.0	.1
W							0	0.0	
WNW							0	0.0	
NW				10.0			1	10.0	10.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	80.0	10.0		10.0			10		2.0

300 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	4.2
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	1.5
S	9.0						1	9.0	.7
SSW		9.0					1	9.0	4.4
SW							0	0.0	
WSW							0	0.0	
W	9.0		9.0				2	18.0	5.3
WNW	9.0			9.0			2	18.0	5.9
NW	18.1	9.0					3	27.1	2.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	54.1	27.0	9.0	9.0			11		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	2.6
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	.9
ESE							0	0.0	
SE							0	0.0	
SSE	20.0	10.0					3	30.0	3.5
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	20.0						2	20.0	2.4
W							0	0.0	
WNW							0	0.0	
NW	20.0		10.0				3	30.0	4.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	80.0	10.0	10.0				10		3.0

500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.9
NNE							0	0.0	
NE	9.0						1	9.0	.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	1.7
SW	18.1	9.0					3	27.1	2.7
WSW							0	0.0	
W							0	0.0	
WNW		9.0					1	9.0	4.2
NW		18.1	9.0	9.0			4	36.1	6.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.1	45.1	9.0	9.0			11		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE			10.0				1	10.0	6.6
E	10.0	10.0					2	20.0	4.1
ESE		10.0					1	10.0	4.5
SE			10.0				1	10.0	6.5
SSE	10.0						1	10.0	2.8
S			10.0				1	10.0	7.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		10.0					1	10.0	3.0
WNW							0	0.0	
NW		10.0		10.0			2	20.0	8.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0	30.0	10.0			10		5.5

750 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	6.8
NNE							0	0.0	
NE		11.1					1	11.1	3.0
ENE							0	0.0	
E				11.1			1	11.1	11.2
ESE							0	0.0	
SE	11.1						1	11.1	1.0
SSE							0	0.0	
S							0	0.0	
SSW	11.1						1	11.1	2.5
SW				11.1			1	11.1	11.7
WSW							0	0.0	
W	11.1						1	11.1	2.1
WNW		11.1					1	11.1	3.1
NW				11.1			1	11.1	13.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	22.2	11.1	33.3			9		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			22.2				2	22.2	7.4
ESE							0	0.0	
SE		11.1					1	11.1	3.4
SSE							0	0.0	
S							0	0.0	
SSW	11.1			11.1			2	22.2	8.2
SW		11.1					1	11.1	4.0
WSW							0	0.0	
W							0	0.0	
WNW		11.1	11.1				2	22.2	6.7
NW			11.1				1	11.1	7.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	44.4	11.1			9		6.6

1000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	8.8
NNE							0	0.0	
NE	11.1						1	11.1	.9
ENE	11.1						1	11.1	.6
E							0	0.0	
ESE	11.1						1	11.1	2.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					11.1		1	11.1	16.9
WSW							0	0.0	
W	11.1						1	11.1	2.6
WNW		11.1					1	11.1	3.1
NW			11.1		11.1		2	22.2	12.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	11.1	22.2		22.2		9		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			14.2				1	14.2	9.5
ESE				14.2			1	14.2	10.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		14.2	14.2				2	28.4	6.4
WSW	14.2						1	14.2	2.3
W							0	0.0	
WNW			14.2	14.2			2	28.4	9.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	14.2	42.6	28.4			7		7.8

1500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	.9
NE	11.1						1	11.1	2.1
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	4.5
SE					11.1		1	11.1	23.1
SSE		11.1					1	11.1	5.7
S							0	0.0	
SSW							0	0.0	
SW			11.1				1	11.1	9.3
WSW							0	0.0	
W		11.1	11.1				2	22.2	6.1
WNW							0	0.0	
NW							0	0.0	
NNW		11.1					1	11.1	4.0
CALM							0	0.0	
COL. TOTALS	22.2	44.4	22.2		11.1		9		6.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			20.0				1	20.0	8.1
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		20.0					1	20.0	5.0
SW				20.0			1	20.0	13.4
WSW	20.0						1	20.0	2.2
W							0	0.0	
WNW				20.0			1	20.0	15.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	20.0	40.0			5		8.8

2000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	20.0						1	20.0	.9
NNE							0	0.0	
NE	20.0						1	20.0	.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	20.0	20.0					2	40.0	3.9
NNW	20.0						1	20.0	2.0
CALM							0	0.0	
COL. TOTALS	80.0	20.0					5		2.3

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JULY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	7.6						1	7.6	1.8
ESE							0	0.0	
SE	7.6						1	7.6	.9
SSE							0	0.0	
S	46.1						6	46.1	1.3
SSW	15.3						2	15.3	1.1
SW							0	0.0	
WSW							0	0.0	
W	15.3						2	15.3	1.7
WNW							0	0.0	
NW	7.6						1	7.6	1.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.5						13		1.4

SURFACE WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	8.0
NNE	8.3						1	8.3	2.2
NE	16.6						2	16.6	2.4
ENE		8.3					1	8.3	4.5
E		8.3					1	8.3	3.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		8.3					1	8.3	4.0
WSW							0	0.0	
W			8.3				1	8.3	6.7
WNW		8.3					1	8.3	5.8
NW		25.0					3	25.0	3.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	58.2	16.6				12		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	38.4	15.3					7	53.7	2.3
SSW	15.3						2	15.3	2.1
SW	7.6						1	7.6	1.5
WSW							0	0.0	
W							0	0.0	
WNW	7.6	7.6					2	15.2	3.0
NW							0	0.0	
NNW		7.6					1	7.6	4.4
CALM							0	0.0	
COL. TOTALS	68.9	30.5					13		2.5

100 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	6.4
NNE		8.3					1	8.3	3.1
NE	8.3						1	8.3	2.3
ENE	8.3	16.6					3	24.9	4.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		16.6					2	16.6	4.2
WNW			8.3				1	8.3	6.7
NW	8.3	16.6					3	24.9	3.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	58.1	16.6				12		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	15.3						2	15.3	1.2
NNE	7.6						1	7.6	.8
NE	7.6						1	7.6	1.6
ENE							0	0.0	
E							0	0.0	
ESE	7.6						1	7.6	.7
SE							0	0.0	
SSE							0	0.0	
S	7.6						1	7.6	2.4
SSW	15.3						2	15.3	.9
SW							0	0.0	
WSW	7.6						1	7.6	.6
W		7.6					1	7.6	5.0
WNW							0	0.0	
NW	7.6						1	7.6	1.9
NNW	7.6	7.6					2	15.2	3.0
CALM							0	0.0	
COL. TOTALS	83.8	15.2					13		1.8

200 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	6.2
NNE	16.6						2	16.6	2.0
NE							0	0.0	
ENE	8.3		8.3	8.3			3	24.9	6.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	1.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		8.3					1	8.3	3.8
W							0	0.0	
WNW				8.3			1	8.3	10.7
NW	16.6						2	16.6	1.6
NNW		8.3					1	8.3	4.0
CALM							0	0.0	
COL. TOTALS	49.8	16.6	16.6	16.6			12		4.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	15.3						2	15.3	1.7
NNE							0	0.0	
NE	23.0						3	23.0	1.2
ENE	15.3						2	15.3	1.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	15.3						2	15.3	1.6
WSW							0	0.0	
W							0	0.0	
WNW	15.3						2	15.3	1.6
NW							0	0.0	
NNW	7.6	7.6					2	15.2	2.5
CALM							0	0.0	
COL. TOTALS	91.8	7.6					13		1.6

300 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.9
NNE	8.3	8.3					2	16.6	2.3
NE	8.3		8.3				2	16.6	4.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	8.3						1	8.3	1.1
SSW							0	0.0	
SW	8.3	8.3					2	16.6	3.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW			8.3				1	8.3	6.3
NNW	16.6	8.3					3	24.9	3.3
CALM							0	0.0	
COL. TOTALS	58.1	24.9	16.6				12		3.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.6						1	7.6	2.7
NNE							0	0.0	
NE	7.6						1	7.6	1.0
ENE	7.6						1	7.6	1.2
E							0	0.0	
ESE	7.6						1	7.6	.9
SE	15.3	7.6					3	22.9	3.1
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	7.6	7.6					2	15.2	2.3
W		7.6					1	7.6	3.6
WNW	7.6	7.6					2	15.2	4.0
NW							0	0.0	
NNW			7.6				1	7.6	6.3
CALM							0	0.0	
COL. TOTALS	60.9	30.4	7.6				13		2.9

500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3				8.3		2	16.6	11.6
ENE							0	0.0	
E		8.3					1	8.3	3.9
ESE							0	0.0	
SE	8.3						1	8.3	1.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	16.6	8.3					3	24.9	1.7
W							0	0.0	
WNW							0	0.0	
NW	8.3	16.6					3	24.9	3.9
NNW	8.3		8.3				2	16.6	3.9
CALM							0	0.0	
COL. TOTALS	49.8	33.2	8.3		8.3		12		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		8.3					1	8.3	5.8
SSE							0	0.0	
S	8.3	8.3					2	16.6	3.7
SSW		8.3					1	8.3	4.4
SW		8.3	8.3				2	16.6	5.6
WSW							0	0.0	
W		16.6					2	16.6	4.8
WNW			8.3				1	8.3	7.4
NW		8.3					1	8.3	4.8
NNW	8.3						1	8.3	1.0
CALM							0	0.0	
COL. TOTALS	24.9	58.1	16.6				12		4.3

750 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		8.3					1	8.3	4.1
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	.9
SE							0	0.0	
SSE							0	0.0	
S	8.3						1	8.3	1.8
SSW							0	0.0	
SW		8.3					1	8.3	5.2
WSW							0	0.0	
W	16.6						2	16.6	1.9
WNW	25.0			8.3			4	33.3	4.7
NW	8.3						1	8.3	1.5
NNW			8.3				1	8.3	9.2
CALM							0	0.0	
COL. TOTALS	66.5	16.6	8.3	8.3			12		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			18.1				2	18.1	8.9
SW		27.2	9.0				4	36.2	5.7
WSW	9.0	9.0	9.0				3	27.0	4.8
W							0	0.0	
WNW		9.0		9.0			2	18.0	8.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	45.2	36.1	9.0			11		6.5

1000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	2.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		8.3					1	8.3	4.7
SW			8.3				1	8.3	8.0
WSW		8.3					1	8.3	4.9
W		8.3					1	8.3	4.7
WNW	8.3		8.3	8.3			3	24.9	7.0
NW		16.6	8.3				3	24.9	5.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	41.5	24.9	8.3			12		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		11.1	22.2				3	33.3	6.4
WSW				11.1			1	11.1	13.7
W	11.1	11.1	11.1				3	33.3	4.7
WNW				11.1			1	11.1	14.6
NW			11.1				1	11.1	8.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	22.2	44.4	22.2			9		7.7

1500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	8.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	1.2
SSW							0	0.0	
SW		11.1	11.1				2	22.2	5.8
WSW	11.1						1	11.1	2.9
W							0	0.0	
WNW			22.2				2	22.2	7.7
NW			11.1				1	11.1	9.5
NNW	11.1						1	11.1	1.3
CALM							0	0.0	
COL. TOTALS	33.3	11.1	55.5				9		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				12.5			1	12.5	10.9
WSW		12.5	12.5		12.5		3	37.5	10.4
W				12.5			1	12.5	13.5
WNW				12.5			1	12.5	12.9
NW		12.5	12.5				2	25.0	6.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0	37.5	12.5		8		10.1

2000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			12.5				1	12.5	7.7
SW			12.5				1	12.5	6.2
WSW			12.5				1	12.5	7.3
W	12.5						1	12.5	.9
WNW			12.5	12.5			2	25.0	10.3
NW			12.5				1	12.5	8.8
NNW	12.5						1	12.5	2.3
CALM							0	0.0	
COL. TOTALS	25.0		62.5	12.5			8		6.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF AUGUST 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100												
101-250				50.0								50.0
251-500	50.0											50.0
501-750												
TOTAL	50.0			50.0								
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				4

INVERSION TYPE												
1												
2												
3	50.0			50.0								100.0
4												
5												

MONTH OF AUGUST 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100								33.3				33.3
101-250				33.3								33.3
251-500												
501-750												
TOTAL				33.3				33.3				
NO INVERSION												33.0
								TOTAL NO. OF OCCURENCES				2

INVERSION TYPE												
1				50.0				50.0				100.0
2												
3												
4												
5.												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR AUGUST 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	0	0
251- 500	0	1
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	2
TOTAL	2	3
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.2	3.8
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-01.41

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	25.0						2	25.0	1.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	50.0						4	50.0	1.2
SSW							0	0.0	
SW	12.5						1	12.5	2.2
WSW							0	0.0	
W	12.5						1	12.5	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						8		1.2

SURFACE WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		11.1					1	11.1	3.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1					1	11.1	3.6
SSE							0	0.0	
S							0	0.0	
SSW		11.1					1	11.1	3.6
SW							0	0.0	
WSW		33.3	11.1				4	44.4	4.8
W	11.1	11.1					2	22.2	4.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	77.7	11.1				9		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	12.5						1	12.5	1.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	50.0						4	50.0	1.1
SSW	12.5						1	12.5	2.4
SW		12.5					1	12.5	3.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	12.5						1	12.5	1.6
CALM							0	0.0	
COL. TOTALS	87.5	12.5					8		1.6

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1					1	11.1	5.5
SSE							0	0.0	
S							0	0.0	
SSW		11.1					1	11.1	3.9
SW			11.1				1	11.1	7.4
WSW	22.2	11.1					3	33.3	3.5
W		11.1					1	11.1	3.7
WNW	11.1						1	11.1	2.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	44.4	11.1				9		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5						1	12.5	1.5
NNE	25.0						2	25.0	2.1
NE	12.5						1	12.5	1.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	12.5	12.5					2	25.0	2.4
SW			12.5				1	12.5	8.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	12.5						1	12.5	2.6
CALM							0	0.0	
COL. TOTALS	75.0	12.5	12.5				8		2.8

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			11.1				1	11.1	6.6
S							0	0.0	
SSW		11.1					1	11.1	4.4
SW		22.2					2	22.2	3.8
WSW		22.2					2	22.2	3.4
W		11.1					1	11.1	4.3
WNW	11.1						1	11.1	2.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	66.6	11.1				9		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	12.5						1	12.5	1.9
NE							0	0.0	
ENE	12.5						1	12.5	.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	12.5	12.5	12.5				3	37.5	5.1
WSW		12.5					1	12.5	4.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						2	25.0	1.4
CALM							0	0.0	
COL. TOTALS	62.5	25.0	12.5				8		3.1

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	1.6
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					1	11.1	5.9
S							0	0.0	
SSW							0	0.0	
SW		11.1					1	11.1	5.2
WSW		11.1			11.1		2	22.2	11.6
W	11.1	22.2	11.1				4	44.4	4.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	55.5	11.1		11.1		9		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			12.5				1	12.5	9.3
SW	12.5	12.5	25.0				4	50.0	5.2
WSW		12.5					1	12.5	5.7
W	12.5						1	12.5	2.5
WNW	12.5						1	12.5	2.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	37.5	25.0	37.5				8		5.0

500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						1	11.1	1.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			11.1				1	11.1	7.7
S							0	0.0	
SSW							0	0.0	
SW			11.1	11.1			2	22.2	11.1
WSW			22.2				2	22.2	8.0
W		22.2					2	22.2	5.7
WNW	11.1						1	11.1	2.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	22.2	44.4	11.1			9		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			28.5				2	28.5	7.8
WSW			14.2				1	14.2	7.4
W			28.5				2	28.5	7.1
WNW			14.2	14.2			2	28.4	9.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			85.4	14.2			7		8.0

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	2.2
SSW			11.1				1	11.1	6.4
SW			11.1				1	11.1	6.2
WSW					11.1		1	11.1	21.4
W		22.2	11.1				3	33.3	5.3
WNW		11.1	11.1				2	22.2	6.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	44.4		11.1		9		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				12.5			1	12.5	10.3
SW				12.5			1	12.5	11.3
WSW			25.0				2	25.0	8.1
W			50.0				4	50.0	8.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			75.0	25.0			8		8.8

750 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE				11.1			1	11.1	13.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	11.1						1	11.1	1.2
SW		11.1					1	11.1	4.1
WSW	11.1		22.2				3	33.3	6.9
W		22.2	11.1				3	33.3	5.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	33.3	33.3	11.1			9		6.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			14.2	14.2	14.2		3	42.6	14.2
W			14.2				1	14.2	8.4
WNW		14.2			14.2		2	28.4	11.6
NW				14.2			1	14.2	13.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		14.2	28.4	28.4	28.4		7		12.5

1500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		14.2					1	14.2	5.2
SSW							0	0.0	
SW				14.2			1	14.2	11.6
WSW				14.2			1	14.2	15.7
W	14.2	14.2					2	28.4	2.6
WNW			14.2				1	14.2	9.4
NW				14.2			1	14.2	10.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	28.4	14.2	42.6			7		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				20.0	20.0		2	40.0	16.2
W				20.0			1	20.0	10.4
WNW							0	0.0	
NW			20.0	20.0			2	40.0	12.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			20.0	60.0	20.0		5		13.4

2000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			16.6	16.6			2	33.2	11.4
WSW				16.6	16.6		2	33.2	15.9
W							0	0.0	
WNW				16.6			1	16.6	11.3
NW				16.6			1	16.6	12.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			16.6	66.4	16.6		6		13.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF SEPTEMBER 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				5.8			11.7	17.6				35.1
101-250	23.5				5.8		5.8	5.8				40.9
251-500	17.6							5.8				23.4
501-750												
TOTAL	41.1			5.8	5.8		17.5	29.2				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				17
INVERSION TYPE												
1							17.6	11.7				29.3
2	5.8			5.8	5.8							17.4
3	23.5							17.6				41.1
4	11.7											11.7
5												

MONTH OF SEPTEMBER 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				9.0	9.0			27.2	9.0			54.2
101-250							18.1	9.0				27.1
251-500												
501-750												
TOTAL				9.0	9.0		18.1	36.2	9.0			
NO INVERSION												18.0
								TOTAL NO. OF OCCURENCES				9
INVERSION TYPE												
1				11.1	11.1		22.2	33.3	11.1			88.8
2												
3								11.1				11.1
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR SEPTEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	1	0
251- 500	1	0
501- 750	1	2
751-1000	0	0
1001-1500	0	1
>1500	0	5
TOTAL	8	8
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.2	7.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.48	-01.06

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.1
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	1.3
S	27.2						3	27.2	1.0
SSW	18.1						2	18.1	1.5
SW							0	0.0	
WSW	9.0						1	9.0	2.7
W	9.0						1	9.0	.4
WNW							0	0.0	
NW							0	0.0	
NNW	9.0						1	9.0	.9
CALM							0	0.0	
COL. TOTALS	90.3	9.0					11		1.4

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.8
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	4.5
W		9.0					1	9.0	5.8
WNW		9.0					1	9.0	4.5
NW							0	0.0	
NNW	18.1	36.3					6	54.4	3.7
CALM							0	0.0	
COL. TOTALS	36.1	63.3					11		3.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	18.1						2	18.1	1.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	18.1						2	18.1	.9
SSE	9.0						1	9.0	1.9
S	18.1						2	18.1	1.3
SSW	18.1						2	18.1	1.5
SW							0	0.0	
WSW			9.0				1	9.0	6.6
W	9.0						1	9.0	.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	90.4		9.0				11		1.7

100 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	18.1						2	18.1	1.6
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	5.3
W			9.0				1	9.0	7.7
WNW							0	0.0	
NW	9.0	9.0					2	18.0	2.4
NNW		36.3					4	36.3	4.3
CALM							0	0.0	
COL. TOTALS	36.1	54.3	9.0				11		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.2
NNE	27.2						3	27.2	1.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	.6
SSW	9.0						1	9.0	.7
SW	9.0						1	9.0	1.1
WSW			18.1				2	18.1	7.2
W							0	0.0	
WNW	9.0						1	9.0	1.6
NW	9.0						1	9.0	1.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.2		18.1				11		2.5

200 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.2
NNE	9.0						1	9.0	2.0
NE	9.0						1	9.0	1.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	1.0
SW							0	0.0	
WSW	9.0						1	9.0	2.1
W							0	0.0	
WNW							0	0.0	
NW	18.1	9.0					3	27.1	3.2
NNW	18.1		9.0				3	27.1	4.7
CALM							0	0.0	
COL. TOTALS	72.2	18.0	9.0				11		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	27.2						3	27.2	1.8
NNE	9.0						1	9.0	1.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0	9.0				2	18.0	7.3
W			9.0				1	9.0	9.4
WNW							0	0.0	
NW	18.1						2	18.1	1.6
NNW	9.0	9.0					2	18.0	2.6
CALM							0	0.0	
COL. TOTALS	63.3	18.0	18.0				11		3.6

300 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.2
NNE							0	0.0	
NE	9.0						1	9.0	1.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0	9.0				2	18.0	5.0
W		9.0					1	9.0	3.5
WNW		9.0					1	9.0	3.0
NW		18.1					2	18.1	4.6
NNW	9.0	18.1					3	27.1	3.8
CALM							0	0.0	
COL. TOTALS	18.0	72.2	9.0				11		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	.8
NE	9.0						1	9.0	2.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0						1	9.0	1.5
WSW				9.0			1	9.0	15.0
W	9.0	9.0		9.0			3	27.0	6.3
WNW	9.0	18.1					3	27.1	3.5
NW	9.0						1	9.0	2.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	54.0	27.1		18.0			11		4.7

500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0	9.0					2	18.0	3.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	1.3
SW							0	0.0	
WSW		18.1					2	18.1	4.8
W		9.0					1	9.0	3.8
WNW			18.1				2	18.1	7.5
NW			9.0				1	9.0	6.0
NNW		18.1					2	18.1	5.0
CALM							0	0.0	
COL. TOTALS	18.0	54.2	27.1				11		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING CCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		9.0	9.0				2	18.0	6.1
WSW		9.0	9.0				2	18.0	5.0
W		18.1		9.0			3	27.1	8.4
WNW		9.0					1	9.0	3.9
NW		9.0	18.1				3	27.1	6.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		54.1	36.1	9.0			11		6.4

750 METER LEVEL WINDS AFTERNOON CCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		9.0					1	9.0	4.1
WSW		9.0					1	9.0	3.5
W		9.0		18.1			3	27.1	9.5
WNW		18.1					2	18.1	4.5
NW			9.0	9.0			2	18.0	9.3
NNW			9.0				1	9.0	6.8
CALM							0	0.0	
COL. TOTALS	9.0	45.1	18.0	27.1			11		6.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING CCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				9.0			1	9.0	10.3
W		9.0		27.2			4	36.2	10.1
WNW		9.0	27.2	9.0			5	45.2	8.8
NW			9.0				1	9.0	8.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		18.0	36.2	45.2			11		9.4

1000 METER LEVEL WINDS AFTERNOON CCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	1.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	3.9
W	9.0		9.0	9.0	9.0		4	36.0	9.6
WNW		9.0	9.0				2	18.0	5.1
NW	9.0			18.1			3	27.1	9.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	18.0	18.0	27.1	9.0		11		7.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		10.0		10.0	10.0	10.0	4	40.0	15.9
WNW			10.0		10.0		2	20.0	12.5
NW				20.0	20.0		4	40.0	13.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		10.0	10.0	30.0	40.0	10.0	10		14.3

1500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			10.0				1	10.0	7.1
W			10.0	20.0		10.0	4	40.0	16.1
WNW			10.0				1	10.0	6.3
NW							0	0.0	
NNW		10.0	10.0	10.0	10.0		4	40.0	12.2
CALM							0	0.0	
COL. TOTALS		10.0	40.0	30.0	10.0	10.0	10		12.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				14.2			1	14.2	15.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					14.2		1	14.2	17.6
WNW							0	0.0	
NW			28.5		14.2		3	42.7	12.9
NNW			14.2	14.2			2	28.4	10.5
CALM							0	0.0	
COL. TOTALS			42.7	28.4	28.4		7		13.3

2000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		14.2	14.2		14.2		3	42.6	9.3
WNW		14.2					1	14.2	4.2
NW				14.2	14.2		2	28.4	14.4
NNW		14.2					1	14.2	5.6
CALM							0	0.0	
COL. TOTALS		42.6	14.2	14.2	28.4		7		9.5

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF OCTOBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	INVERSION BASE HEIGHT (METERS) 251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	4.7			4.7	9.5		4.7	9.5				33.1
101-250	9.5				4.7		9.5	4.7				28.4
251-500	23.8							4.7				28.5
501-750	9.5											9.5
TOTAL	47.5			4.7	14.2		14.2	18.9				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				21
INVERSION TYPE												
1				4.7	9.5		4.7	4.7				23.6
2							9.5	9.5				19.0
3	38.0				4.7			4.7				47.4
4	9.5											9.5
5												

MONTH OF OCTOBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	INVERSION BASE HEIGHT (METERS) 251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				5.8	11.7		5.8	23.5				46.8
101-250							11.7	11.7				23.4
251-500												
501-750												
TOTAL				5.8	11.7		17.5	35.2				
NO INVERSION												29.0
								TOTAL NO. OF OCCURENCES				12
INVERSION TYPE												
1					16.6			33.3				49.9
2							25.0	8.3				33.3
3								8.3				8.3
4				8.3								8.3
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR OCTOBER 1978

IXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	9	0
101- 250	0	1
251- 500	0	1
501- 750	0	0
751-1000	0	1
1001-1500	1	3
>1500	0	5
TOTAL	10	11
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.1	6.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-01.14

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						1	11.1	1.3
E							0	0.0	
ESE							0	0.0	
SE	11.1						1	11.1	.9
SSE							0	0.0	
S	33.3						3	33.3	1.1
SSW	11.1						1	11.1	.9
SW	22.2						2	22.2	1.1
WSW							0	0.0	
W	11.1						1	11.1	2.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.9						9		1.2

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	20.0						2	20.0	.8
NNE	20.0						2	20.0	.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	10.0						1	10.0	1.3
S	20.0						2	20.0	1.1
SSW							0	0.0	
SW							0	0.0	
WSW			10.0				1	10.0	6.3
W							0	0.0	
WNW							0	0.0	
NW		20.0					2	20.0	3.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	70.0	20.0	10.0				10		2.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	2.1
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	.6
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	.7
S	33.3						3	33.3	1.3
SSW							0	0.0	
SW	11.1						1	11.1	1.1
WSW	11.1		11.1				2	22.2	4.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	88.8		11.1				9		1.9

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	1.0
NNE	10.0						1	10.0	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	.4
SSW	20.0						2	20.0	.4
SW	10.0						1	10.0	2.5
WSW				10.0			1	10.0	11.1
W	10.0						1	10.0	.2
WNW	10.0						1	10.0	.5
NW		10.0					1	10.0	4.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	80.0	10.0		10.0			10		2.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	1.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	.4
SSW							0	0.0	
SW							0	0.0	
WSW	11.1	33.3					4	44.4	3.9
W							0	0.0	
WNW	11.1						1	11.1	1.4
NW							0	0.0	
NNW	11.1	11.1					2	22.2	1.9
CALM							0	0.0	
COL. TOTALS	55.5	44.4					9		2.5

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0	10.0					2	20.0	3.3
NNE	20.0						2	20.0	1.1
NE	10.0						1	10.0	2.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		10.0					1	10.0	3.3
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	10.0			10.0			2	20.0	7.8
W							0	0.0	
WNW	10.0						1	10.0	1.2
NW		10.0					1	10.0	4.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0	30.0		10.0			10		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		22.2					2	22.2	3.7
NNE		11.1					1	11.1	3.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	.2
SSW							0	0.0	
SW		11.1					1	11.1	4.6
WSW		33.3	11.1				4	44.4	4.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	77.7	11.1				9		3.7

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	4.9
NNE	10.0						1	10.0	.3
NE	10.0						1	10.0	.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	2.3
SSW							0	0.0	
SW		10.0					1	10.0	3.3
WSW							0	0.0	
W		10.0					1	10.0	4.0
WNW		20.0					2	20.0	3.6
NW							0	0.0	
NNW	20.0						2	20.0	1.2
CALM							0	0.0	
COL. TOTALS	50.0	50.0					10		2.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		22.2	33.3				5	55.5	6.5
W	11.1	11.1					2	22.2	3.8
WNW							0	0.0	
NW		11.1					1	11.1	5.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	44.4	33.3				9		5.1

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	1.3
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	2.3
SE							0	0.0	
SSE		10.0					1	10.0	4.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		20.0					2	20.0	4.4
W		10.0	10.0				2	20.0	6.1
WNW			10.0				1	10.0	6.7
NW	10.0						1	10.0	1.0
NNW		10.0					1	10.0	5.4
CALM							0	0.0	
COL. TOTALS	30.0	50.0	20.0				10		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	12.5						1	12.5	2.4
SW							0	0.0	
WSW		12.5	12.5	25.0			4	50.0	8.4
W			37.5				3	37.5	6.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	12.5	50.0	25.0			8		7.0

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		10.0					1	10.0	4.1
S							0	0.0	
SSW		10.0					1	10.0	5.9
SW							0	0.0	
WSW		20.0					2	20.0	4.6
W			20.0	10.0	10.0		4	40.0	11.3
WNW	10.0						1	10.0	2.8
NW							0	0.0	
NNW		10.0					1	10.0	4.6
CALM							0	0.0	
COL. TOTALS	10.0	50.0	20.0	10.0	10.0		10		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	14.2			14.2			2	28.4	7.5
W			42.8	14.2			4	57.0	8.9
WNW			14.2				1	14.2	9.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2		57.0	28.4			7		8.6

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				11.1			1	11.1	10.0
SW		11.1					1	11.1	5.8
WSW		11.1	11.1				2	22.2	6.1
W			22.2	11.1			3	33.3	9.4
WNW				11.1			1	11.1	11.1
NW		11.1					1	11.1	3.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	33.3	33.3			9		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	16.6						1	16.6	2.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				16.6	16.6		2	33.2	17.0
WNW				16.6	16.6	16.6	3	49.8	20.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6			33.2	33.2	16.6	6		16.3

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	11.1		11.1				2	22.2	4.8
WSW							0	0.0	
W			11.1	11.1	11.1		3	33.3	12.9
WNW				11.1	11.1	11.1	3	33.3	21.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2		22.2	22.2	22.2	11.1	9		12.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0					1	25.0	4.0
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW					25.0	50.0	3	75.0	26.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0			25.0	50.0	4		20.6

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				14.2			1	14.2	10.4
WSW							0	0.0	
W		14.2			14.2		2	28.4	11.8
WNW			28.5				2	28.5	6.4
NW					14.2		1	14.2	17.8
NNW			14.2				1	14.2	6.1
CALM							0	0.0	
COL. TOTALS		14.2	42.7	14.2	28.4		7		10.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF NOVEMBER 1978 MORNING

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (METERS) 001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTA
001-100	4.0			4.0	8.0	4.0	8.0	4.0				32.0
101-250	8.0						12.0	8.0				28.0
251-500	12.0			4.0	4.0		12.0					32.0
501-750	8.0											8.0
TOTAL	32.0			8.0	12.0	4.0	32.0	12.0				
NO INVERSION												0.
								TOTAL NO. OF OCCURENCES				2
INVERSION TYPE												
1					4.0	4.0	20.0	8.0				36.0
2	4.0						8.0	4.0				16.0
3	16.0			4.0	8.0		4.0					32.0
4	12.0			4.0								16.0
5												

MONTH OF NOVEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (METERS) 001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTA
001-100	3.5		3.5	3.5	3.5	3.5	7.1	7.1				31.7
101-250		3.5	3.5		3.5	7.1	17.8	7.1				42.5
251-500		3.5	7.1	3.5			3.5					17.6
501-750												
TOTAL	3.5	7.0	14.1	7.0	7.0	10.6	28.4	14.2				
NO INVERSION												7.
								TOTAL NO. OF OCCURENCES				2
INVERSION TYPE												
1	3.8		3.8	3.8	3.8	7.6	11.5	15.3				49.6
2			3.8			3.8	15.3					22.9
3		7.6	3.8	3.8	3.8		3.8					22.8
4			3.8									3.8
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR NOVEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	7	0
101- 250	0	4
251- 500	1	1
501- 750	0	1
751-1000	0	0
1001-1500	1	2
>1500	1	2
TOTAL	10	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.5	4.4
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.36	-01.34

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	57.1						4	57.1	1.0
SSW		28.5					2	28.5	4.0
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	14.2						1	14.2	1.8
CALM							0	0.0	
COL. TOTALS	71.3	28.5					7		1.9

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	22.2						2	22.2	2.2
NNE	11.1	11.1					2	22.2	3.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	1.3
S	22.2						2	22.2	1.3
SSW							0	0.0	
SW							0	0.0	
WSW		11.1					1	11.1	5.4
W		11.1					1	11.1	4.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	33.3					9		2.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	14.2						1	14.2	1.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	42.8		28.5				5	71.3	3.5
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		14.2					1	14.2	4.0
CALM							0	0.0	
COL. TOTALS	57.0	14.2	28.5				7		3.2

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	22.2						2	22.2	2.7
NNE		11.1					1	11.1	4.4
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	2.1
SSW							0	0.0	
SW							0	0.0	
WSW				11.1			1	11.1	13.5
W			11.1				1	11.1	6.2
WNW	11.1						1	11.1	.5
NW							0	0.0	
NNW	11.1	11.1					2	22.2	1.8
CALM							0	0.0	
COL. TOTALS	55.5	22.2	11.1	11.1			9		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		14.2					1	14.2	5.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	14.2	14.2	14.2				3	42.6	4.3
SW							0	0.0	
WSW		14.2					1	14.2	3.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	14.2		14.2				2	28.4	5.1
CALM							0	0.0	
COL. TOTALS	28.4	42.6	28.4				7		4.5

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	22.2						2	22.2	2.4
NNE	11.1	11.1	11.1				3	33.3	3.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			22.2				2	22.2	7.9
WNW							0	0.0	
NW		11.1					1	11.1	3.2
NNW			11.1				1	11.1	6.1
CALM							0	0.0	
COL. TOTALS	33.3	22.2	44.4				9		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						1	14.2	.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			14.2				1	14.2	6.0
SW		28.5					2	28.5	5.1
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	14.2		14.2				2	28.4	5.9
NNW	14.2						1	14.2	2.6
CALM							0	0.0	
COL. TOTALS	42.6	28.5	28.4				7		4.4

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.7
NNE			11.1				1	11.1	7.0
NE	11.1						1	11.1	2.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	11.1						1	11.1	.6
WSW							0	0.0	
W			11.1	11.1			2	22.2	10.3
WNW		11.1					1	11.1	5.4
NW		11.1					1	11.1	3.9
NNW			11.1				1	11.1	6.8
CALM							0	0.0	
COL. TOTALS	33.3	22.2	33.3	11.1			9		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	14.2						1	14.2	2.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	14.2						1	14.2	2.1
SW		14.2					1	14.2	4.6
WSW			14.2	14.2			2	28.4	9.2
W			14.2				1	14.2	6.8
WNW							0	0.0	
NW			14.2				1	14.2	8.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	14.2	42.6	14.2			7		6.2

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	8.3
NE	11.1						1	11.1	2.4
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	4.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		11.1					1	11.1	5.7
SW							0	0.0	
WSW	11.1						1	11.1	1.1
W		11.1					1	11.1	5.1
WNW			11.1				1	11.1	8.8
NW		22.2					2	22.2	4.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	55.5	22.2				9		5.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		14.2					1	14.2	5.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			28.5				2	28.5	7.0
WSW				14.2			1	14.2	10.4
W			14.2				1	14.2	6.8
WNW				14.2	14.2		2	28.4	14.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		14.2	42.7	28.4	14.2		7		9.5

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				11.1			1	11.1	10.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			11.1				1	11.1	6.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1	11.1				2	22.2	7.3
W			11.1		11.1		2	22.2	14.9
WNW				22.2			2	22.2	13.1
NW	11.1						1	11.1	1.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	33.3	33.3	11.1		9		9.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			20.0				1	20.0	7.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			20.0				1	20.0	6.7
SSW							0	0.0	
SW							0	0.0	
WSW			20.0				1	20.0	8.6
W			20.0				1	20.0	9.9
WNW				20.0			1	20.0	13.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			80.0	20.0			5		9.2

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				12.5			1	12.5	12.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			12.5				1	12.5	6.3
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			25.0				2	25.0	9.0
W							0	0.0	
WNW		12.5		12.5	25.0		4	50.0	14.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		12.5	37.5	25.0	25.0		8		11.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				33.3			1	33.3	12.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				33.3			1	33.3	13.9
WNW							0	0.0	
NW						33.3	1	33.3	26.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				66.6		33.3	3		17.4

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				16.6			1	16.6	13.6
W				16.6			1	16.6	12.5
WNW						16.6	1	16.6	34.0
NW		16.6			16.6		2	33.2	14.1
NNW		16.6					1	16.6	3.9
CALM							0	0.0	
COL. TOTALS		33.2		33.2	16.6	16.6	6		15.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				100.0			1	100.0	10.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			1		10.5

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				33.3			1	33.3	12.8
W							0	0.0	
WNW			66.6				2	66.6	7.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			66.6	33.3			3		9.5

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF DECEMBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	13.3			6.6	6.6		6.6	6.6				39.7
101-250	20.0					6.6	20.0					46.6
251-500							6.6					6.6
501-750	6.6											6.6
TOTAL	39.9			6.6	6.6	6.6	33.2	6.6				
NO INVERSION												0.(
								TOTAL NO. OF OCCURENCES				15
INVERSION TYPE												
1				6.6	6.6		26.6					39.8
2						6.6		6.6				13.2
3	33.3						6.6					39.9
4	6.6											6.6
5												

MONTH OF DECEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	4.0	4.0	8.0	16.0	4.0	4.0	16.0	12.0				68.0
101-250		4.0	4.0		4.0	4.0						16.0
251-500	4.0	4.0				4.0						12.0
501-750												
TOTAL	8.0	12.0	12.0	16.0	8.0	12.0	16.0	12.0				
NO INVERSION												4.(
								TOTAL NO. OF OCCURENCES				2(
INVERSION TYPE												
1		4.1	8.3	4.1	4.1		12.5	4.1				37.2
2	4.1		4.1	8.3	4.1	4.1	4.1	8.3				37.1
3	4.1	4.1		4.1		8.3						20.6
4		4.1										4.1
5.												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR DECEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	3	0
101- 250	1	4
251- 500	1	1
501- 750	1	0
751-1000	0	0
1001-1500	0	2
>1500	1	2
TOTAL	7	9
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.9	6.3
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.57	-01.84

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	22.2						2	22.2	.6
NNE	11.1						1	11.1	1.8
NE	11.1						1	11.1	.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	44.4						4	44.4	1.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	11.1						1	11.1	1.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.9						9		1.1

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	10.0						1	10.0	.4
S	30.0						3	30.0	.5
SSW	10.0						1	10.0	.9
SW	20.0						2	20.0	2.0
WSW							0	0.0	
W	20.0						2	20.0	1.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						10		1.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	22.2	11.1					3	33.3	2.0
NNE	11.1						1	11.1	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1	11.1					2	22.2	2.4
SSW	11.1						1	11.1	1.9
SW							0	0.0	
WSW	11.1						1	11.1	1.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	.4
CALM							0	0.0	
COL. TOTALS	77.7	22.2					9		1.7

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	20.0						2	20.0	.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	.5
SSW	30.0						3	30.0	.8
SW		10.0					1	10.0	4.0
WSW							0	0.0	
W	10.0						1	10.0	1.3
WNW							0	0.0	
NW	10.0						1	10.0	1.0
NNW		10.0					1	10.0	3.3
CALM							0	0.0	
COL. TOTALS	80.0	20.0					10		1.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	22.2						2	22.2	1.7
NNE	11.1						1	11.1	2.8
NE	11.1						1	11.1	1.0
ENE	11.1						1	11.1	.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	22.2						2	22.2	1.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	11.1						1	11.1	.7
NNW		11.1					1	11.1	5.7
CALM							0	0.0	
COL. TOTALS	88.8	11.1					9		1.8

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0	10.0					2	20.0	2.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			10.0				1	10.0	5.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	20.0						2	20.0	1.8
NW		10.0					1	10.0	4.7
NNW	30.0						3	30.0	1.8
CALM							0	0.0	
COL. TOTALS	70.0	20.0	10.0				10		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	44.4	11.1					5	55.5	2.6
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						1	11.1	.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	2.0
S							0	0.0	
SSW							0	0.0	
SW		11.1					1	11.1	4.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	2.9
CALM							0	0.0	
COL. TOTALS	77.7	22.2					9		2.6

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0	10.0					2	20.0	2.7
NNE	30.0						3	30.0	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			10.0				1	10.0	6.2
WSW							0	0.0	
W							0	0.0	
WNW	10.0	10.0					2	20.0	3.5
NW	10.0						1	10.0	1.2
NNW	10.0						1	10.0	2.1
CALM							0	0.0	
COL. TOTALS	70.0	20.0	10.0				10		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	1.8
SE							0	0.0	
SSE	11.1						1	11.1	.7
S							0	0.0	
SSW		11.1					1	11.1	4.7
SW							0	0.0	
WSW			11.1				1	11.1	6.6
W	11.1						1	11.1	1.1
WNW							0	0.0	
NW	11.1	11.1					2	22.2	3.7
NNW		11.1					1	11.1	3.6
CALM							0	0.0	
COL. TOTALS	55.5	33.3	11.1				9		3.0

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	1.4
ENE							0	0.0	
E	10.0						1	10.0	1.0
ESE							0	0.0	
SE	10.0						1	10.0	1.3
SSE							0	0.0	
S							0	0.0	
SSW		20.0					2	20.0	4.5
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	10.0		10.0				2	20.0	4.9
NW	10.0		10.0				2	20.0	4.6
NNW	10.0						1	10.0	2.8
CALM							0	0.0	
COL. TOTALS	60.0	20.0	20.0				10		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		14.2					1	14.2	3.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		14.2					1	14.2	5.6
SW			14.2				1	14.2	8.5
WSW				14.2			1	14.2	12.3
W							0	0.0	
WNW				14.2			1	14.2	10.8
NW			14.2				1	14.2	9.4
NNW		14.2					1	14.2	4.8
CALM							0	0.0	
COL. TOTALS		42.6	28.4	28.4			7		7.8

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		10.0					1	10.0	4.9
SW							0	0.0	
WSW	10.0	10.0	20.0				4	40.0	5.6
W		10.0					1	10.0	4.9
WNW		10.0			10.0		2	20.0	10.1
NW			20.0				2	20.0	8.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	40.0	40.0		10.0		10		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				16.6			1	16.6	10.7
W				16.6			1	16.6	13.6
WNW	16.6						1	16.6	2.5
NW			16.6		16.6		2	33.2	16.5
NNW			16.6				1	16.6	8.2
CALM							0	0.0	
COL. TOTALS	16.6		33.2	33.2	16.6		6		11.3

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	2.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		11.1	11.1				2	22.2	7.2
WSW							0	0.0	
W		22.2	11.1				3	33.3	6.0
WNW			22.2				2	22.2	8.6
NW							0	0.0	
NNW			11.1				1	11.1	9.1
CALM							0	0.0	
COL. TOTALS	11.1	33.3	55.5				9		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				40.0			2	40.0	13.7
WNW							0	0.0	
NW						20.0	1	20.0	29.2
NNW				40.0			2	40.0	11.6
CALM							0	0.0	
COL. TOTALS				80.0		20.0	5		15.9

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			12.5				1	12.5	7.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	12.5						1	12.5	2.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			12.5				1	12.5	7.1
SSW							0	0.0	
SW							0	0.0	
WSW				12.5			1	12.5	13.3
W				12.5			1	12.5	12.8
WNW			25.0				2	25.0	7.4
NW				12.5			1	12.5	11.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5		50.0	37.5			8		8.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					100.0		1	100.0	17.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS					100.0		1		17.0

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			14.2				1	14.2	8.8
NNE							0	0.0	
NE							0	0.0	
ENE		14.2					1	14.2	3.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		14.2					1	14.2	4.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				14.2			1	14.2	14.5
WNW			28.5				2	28.5	9.4
NW			14.2				1	14.2	7.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		28.4	56.9	14.2			7		8.2

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				9.0	9.0	3.0		3.0	3.0			27.1
101-250	9.0	3.0		3.0	12.1		9.0	6.0				42.1
251-500	12.1	3.0	3.0	3.0			3.0					24.1
501-750	6.0											6.0
TOTAL	27.1	6.0	3.0	15.0	21.1	3.0	12.0	9.0	3.0			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				33
INVERSION TYPE												
1		3.0		3.0	15.1	3.0	6.0	9.0	3.0			42.1
2	6.0			12.1	3.0		3.0					24.1
3	6.0		3.0		3.0		3.0					15.0
4	15.1	3.0										18.1
5												

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				2.7	10.8		2.7	18.9	2.7			37.8
101-250	2.7	8.1	5.4	2.7	2.7	5.4	10.8	5.4				43.2
251-500	5.4	2.7				2.7		5.4				16.2
501-750	2.7											2.7
TOTAL	10.8	10.8	5.4	5.4	13.5	8.1	13.5	29.7	2.7			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				37
INVERSION TYPE												
1					10.8	2.7	5.4	18.9	2.7			40.5
2			2.7	2.7	2.7	5.4	8.1	10.8				32.4
3	8.1	8.1	2.7	2.7								21.6
4	2.7	2.7										5.4
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	7	0
101- 250	3	3
251- 500	1	2
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	1
TOTAL	11	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	1.8	1.8
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.68	-00.72

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						1	14.2	1.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	42.8						3	42.8	.6
SSW	14.2						1	14.2	1.8
SW			14.2				1	14.2	6.7
WSW		14.2					1	14.2	4.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	71.2	14.2	14.2				7		2.3

SURFACE WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	16.6						1	16.6	1.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	16.6						1	16.6	2.2
SSW							0	0.0	
SW	16.6						1	16.6	.9
WSW							0	0.0	
W		16.6					1	16.6	5.8
WNW							0	0.0	
NW			16.6				1	16.6	6.7
NNW	16.6						1	16.6	2.2
CALM							0	0.0	
COL. TOTALS	66.4	16.6	16.6				6		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						1	14.2	1.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	14.2						1	14.2	.4
S	28.5						2	28.5	2.0
SSW	14.2						1	14.2	.3
SW							0	0.0	
WSW			14.2	14.2			2	28.4	10.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	71.1		14.2	14.2			7		3.9

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						1	16.6	2.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	16.6						1	16.6	1.9
SSW							0	0.0	
SW	16.6						1	16.6	.1
WSW							0	0.0	
W				16.6			1	16.6	10.8
WNW							0	0.0	
NW		16.6	16.6				2	33.2	5.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	16.6	16.6	16.6			6		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	14.2						1	14.2	2.6
E	14.2						1	14.2	.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	14.2						1	14.2	.5
SW							0	0.0	
WSW				14.2	14.2		2	28.4	16.8
W	14.2						1	14.2	2.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	14.0	
COL. TOTALS	56.8			14.2	14.2		7		5.6

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	16.6	16.6					2	33.2	2.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	16.6						1	16.6	1.1
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				16.6			1	16.6	13.7
WNW							0	0.0	
NW			16.6				1	16.6	7.4
NNW		16.6					1	16.6	4.0
CALM							0	0.0	
COL. TOTALS	33.2	33.2	16.6	16.6			6		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	14.2						1	14.2	1.4
E	14.2						1	14.2	1.1
ESE							0	0.0	
SE							0	0.0	
SSE	14.2						1	14.2	.5
S							0	0.0	
SSW							0	0.0	
SW		14.2					1	14.2	4.4
WSW			14.2	28.5			3	42.7	9.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	42.6	14.2	14.2	28.5			7		5.2

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						1	16.6	.5
NNE							0	0.0	
NE							0	0.0	
ENE	16.6						1	16.6	2.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		16.6					1	16.6	3.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				16.6			1	16.6	14.2
WNW							0	0.0	
NW				16.6			1	16.6	11.8
NNW		16.6					1	16.6	4.7
CALM							0	0.0	
COL. TOTALS	33.2	33.2		33.2			6		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	14.2						1	14.2	1.9
SE							0	0.0	
SSE		14.2					1	14.2	5.3
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	14.2		42.8	14.2			5	71.2	8.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	14.2	42.8	14.2			7		6.9

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			16.6				1	16.6	6.1
SSW		16.6					1	16.6	5.0
SW							0	0.0	
WSW							0	0.0	
W		16.6	16.6				2	33.2	6.4
WNW							0	0.0	
NW				16.6			1	16.6	13.6
NNW		16.6					1	16.6	5.3
CALM							0	0.0	
COL. TOTALS		49.8	33.2	16.6			6		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				14.2			1	14.2	10.9
SW		14.2					1	14.2	4.1
WSW		28.5	28.5				4	57.0	5.2
W							0	0.0	
WNW		14.2					1	14.2	4.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		56.9	28.5	14.2			7		5.7

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			20.0				1	20.0	9.4
SW		20.0					1	20.0	5.1
WSW							0	0.0	
W		20.0					1	20.0	4.4
WNW				20.0			1	20.0	10.8
NW		20.0					1	20.0	5.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		60.0	20.0	20.0			5		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				14.2			1	14.2	12.7
SW		14.2					1	14.2	5.6
WSW			14.2	14.2			2	28.4	11.8
W			28.5	14.2			3	42.7	9.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		14.2	42.7	42.6			7		10.0

1000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			20.0				1	20.0	7.9
SW							0	0.0	
WSW			20.0				1	20.0	7.2
W		20.0					1	20.0	4.4
WNW		20.0		20.0			2	40.0	9.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		40.0	40.0	20.0			5		7.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			25.0	50.0			3	75.0	10.6
W		25.0					1	25.0	5.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0	50.0			4		9.2

1500 METER LEVEL WINDS AFTERNCON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	12.6
WSW							0	0.0	
W		25.0	50.0				3	75.0	6.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	50.0	25.0			4		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				50.0			1	50.0	13.2
WNW		50.0					1	50.0	4.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0		50.0			2		8.7

2000 METER LEVEL WINDS AFTERNCON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		50.0		50.0			2	100.0	7.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0		50.0			2		7.4

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF FEBRUARY 1979 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	15.7			5.2			5.2	10.5				36.6
101-250	10.5			5.2	5.2		10.5	5.2				36.6
251-500	15.7		5.2									20.9
501-750												
TOTAL	41.9		5.2	10.4	5.2		15.7	15.7				
NO INVERSION												5.0
								TOTAL NO. OF OCCURENCES				18
INVERSION TYPE												
1				11.1			16.6	16.6				44.3
2	16.6				5.5							22.1
3	11.1		5.5									16.6
4	16.6											16.6
5												

MONTH OF FEBRUARY 1979 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	9.0			9.0	9.0			9.0				36.0
101-250		9.0					9.0					18.0
251-500		9.0										9.0
501-750												
TOTAL	9.0	18.0		9.0	9.0		9.0	9.0				
NO INVERSION												36.0
								TOTAL NO. OF OCCURENCES				7
INVERSION TYPE												
1							14.2	14.2				28.4
2	14.2	14.2		14.2	14.2							56.8
3		14.2										14.2
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR FEBRUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	1	2
251- 500	2	0
501- 750	0	1
751-1000	0	2
1001-1500	1	0
>1500	1	2
TOTAL	9	7
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.5	5.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.45

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	27.2						3	27.2	.7
NNE	9.0						1	9.0	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	18.1						2	18.1	1.1
S	36.3						4	36.3	.8
SSW							0	0.0	
SW							0	0.0	
WSW	9.0						1	9.0	1.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.6						11		.9

SURFACE WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	.9
NNE	9.0						1	9.0	.9
NE	9.0						1	9.0	1.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	.9
SSW		9.0					1	9.0	4.5
SW							0	0.0	
WSW							0	0.0	
W	9.0		9.0				2	18.0	4.4
WNW							0	0.0	
NW	9.0	9.0					2	18.0	3.1
NNW	9.0		9.0				2	18.0	4.0
CALM							0	0.0	
COL. TOTALS	63.0	18.0	18.0				11		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	18.1						2	18.1	1.6
SSE	18.1						2	18.1	1.1
S	18.1						2	18.1	1.7
SSW							0	0.0	
SW		9.0					1	9.0	4.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	18.1	9.0					3	27.1	1.6
CALM							0	0.0	
COL. TOTALS	81.4	18.0					11		1.7

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	18.1						2	18.1	1.3
NNE							0	0.0	
NE	9.0						1	9.0	1.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			9.0				1	9.0	9.7
SW							0	0.0	
WSW			9.0				1	9.0	6.3
W		9.0					1	9.0	3.0
WNW							0	0.0	
NW		18.1					2	18.1	4.0
NNW	18.1		9.0				3	27.1	3.3
CALM							0	0.0	
COL. TOTALS	45.2	27.1	27.0				11		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	18.1						2	18.1	.9
NE	9.0						1	9.0	1.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	3.5
S	9.0						1	9.0	1.1
SSW	9.0						1	9.0	2.9
SW	9.0						1	9.0	1.8
WSW		9.0					1	9.0	5.8
W	9.0	9.0					2	18.0	2.7
WNW		9.0					1	9.0	5.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	63.1	36.0					11		2.6

200 METER LEVEL WINDS AFTERNCON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	36.3						4	36.3	2.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	4.4
SW							0	0.0	
WSW	9.0		9.0				2	18.0	4.0
W							0	0.0	
WNW		9.0					1	9.0	3.7
NW			9.0	9.0			2	18.0	10.0
NNW	9.0						1	9.0	1.4
CALM							0	0.0	
COL. TOTALS	54.3	18.0	18.0	9.0			11		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	1.0
ESE							0	0.0	
SE	18.1						2	18.1	1.6
SSE							0	0.0	
S		9.0					1	9.0	4.7
SSW		9.0					1	9.0	5.4
SW	9.0	9.0					2	18.0	2.1
WSW		18.1	9.0				3	27.1	6.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	45.1	9.0				11		3.6

300 METER LEVEL WINDS AFTERNCON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	18.1						2	18.1	1.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			9.0				1	9.0	8.0
WSW							0	0.0	
W	9.0			9.0			2	18.0	8.5
WNW		9.0					1	9.0	3.4
NW	18.1			9.0			3	27.1	5.4
NNW		9.0					1	9.0	4.6
CALM							0	0.0	
COL. TOTALS	54.2	18.0	9.0	18.0			11		4.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.2
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	2.6
SSE	9.0	9.0					2	18.0	3.0
S		9.0					1	9.0	4.9
SSW		9.0					1	9.0	5.7
SW			9.0				1	9.0	6.3
WSW		9.0	9.0	9.0			3	27.0	7.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		9.0					1	9.0	3.8
CALM							0	0.0	
COL. TOTALS	27.0	45.0	18.0	9.0			11		4.8

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.7
E							0	0.0	
ESE							0	0.0	
SE		9.0					1	9.0	4.4
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		9.0					1	9.0	3.1
WSW	9.0						1	9.0	1.7
W			9.0				1	9.0	7.4
WNW	18.1	18.1					4	36.2	3.3
NW				9.0			1	9.0	11.2
NNW			9.0				1	9.0	6.8
CALM							0	0.0	
COL. TOTALS	36.1	36.1	18.0	9.0			11		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		9.0					1	9.0	3.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				9.0			1	9.0	11.5
SSW		9.0	9.0				2	18.0	6.5
SW		9.0	9.0	9.0			3	27.0	7.2
WSW			9.0				1	9.0	9.2
W		9.0	9.0				2	18.0	7.7
WNW							0	0.0	
NW				9.0			1	9.0	10.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		36.0	36.0	27.0			11		7.6

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		9.0					1	9.0	3.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	3.5
SW							0	0.0	
WSW		18.1					2	18.1	4.9
W	9.0		9.0				2	18.0	4.9
WNW		18.1	9.0				3	27.1	5.1
NW			9.0				1	9.0	6.2
NNW	9.0						1	9.0	.4
CALM							0	0.0	
COL. TOTALS	18.0	54.2	27.0				11		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S					9.0		1	9.0	22.1
SSW							0	0.0	
SW		9.0	9.0	9.0			3	27.0	8.4
WSW		9.0		9.0			2	18.0	8.6
W		9.0		9.0	9.0		3	27.0	11.6
WNW							0	0.0	
NW			9.0				1	9.0	9.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		36.0	18.0	27.0	18.0		11		10.2

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.5
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	5.1
SW	9.0	9.0					2	18.0	3.1
WSW	9.0		9.0				2	18.0	4.6
W				18.1			2	18.1	11.2
WNW			18.1				2	18.1	7.3
NW	9.0						1	9.0	2.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	27.0	27.1	18.1			11		5.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			12.5				1	12.5	7.7
SW							0	0.0	
WSW	12.5	12.5		12.5			3	37.5	7.2
W			12.5	12.5	12.5		3	37.5	14.7
WNW							0	0.0	
NW							0	0.0	
NNW			12.5				1	12.5	9.9
CALM							0	0.0	
COL. TOTALS	12.5	12.5	37.5	25.0	12.5		8		10.4

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0	10.0				10.0	3	30.0	10.9
NNE							0	0.0	
NE							0	0.0	
ENE		10.0					1	10.0	5.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		10.0					1	10.0	4.3
SW							0	0.0	
WSW			10.0	10.0			2	20.0	10.5
W			10.0				1	10.0	7.8
WNW				10.0			1	10.0	11.1
NW		10.0					1	10.0	3.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	40.0	20.0	20.0		10.0	10		8.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N				16.6			1	16.6	10.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		16.6	33.3				3	49.9	7.0
W		16.6		16.6			2	33.2	9.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.2	33.3	33.2			6		8.3

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		14.2	14.2				2	28.4	6.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		14.2					1	14.2	4.6
SW							0	0.0	
WSW					14.2		1	14.2	24.4
W			14.2				1	14.2	7.0
WNW			14.2		14.2		2	28.4	13.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		28.4	42.6		28.4		7		10.8

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF MARCH 1979 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	5.8	2.9	8.8	2.9	8.8	2.9	11.7	2.9				46.7
101-250	11.7		2.9	8.8	2.9		11.7	2.9				40.9
251-500	8.8											8.8
501-750	2.9											2.9
TOTAL	29.2	2.9	11.7	11.7	11.7	2.9	23.4	5.8				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				34
INVERSION TYPE												
1			2.9	5.8	5.8		11.7	2.9				29.1
2	8.8	2.9	8.8	5.8	2.9	2.9	11.7	2.9				46.7
3	11.7				2.9							14.6
4	8.8											8.8
5												

MONTH OF MARCH 1979 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			5.0		5.0	5.0	15.0	20.0	5.0			55.0
101-250	5.0			5.0				10.0				20.0
251-500							5.0					5.0
501-750												
TOTAL	5.0		5.0	5.0	5.0	5.0	20.0	30.0	5.0			
NO INVERSION												20.0
								TOTAL NO. OF OCCURENCES				16
INVERSION TYPE												
1			6.2	6.2	6.2	6.2	18.7	31.2	6.2			80.9
2	6.2						6.2	6.2				18.6
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MARCH 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	7	0
101- 250	2	1
251- 500	2	2
501- 750	0	0
751-1000	0	1
1001-1500	0	2
>1500	1	6
TOTAL	12	12
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.0	5.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.48	-01.11

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

SURFACE WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	3.1
NNE	10.0						1	10.0	.4
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	10.0						1	10.0	.2
S	40.0						4	40.0	.9
SSW	10.0						1	10.0	.2
SW	10.0						1	10.0	.4
WSW							0	0.0	
W							0	0.0	
WNW	10.0						1	10.0	.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	90.0	10.0					10		.9

SURFACE WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						1	14.2	1.3
NE							0	0.0	
ENE							0	0.0	
E	14.2						1	14.2	2.2
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		14.2					1	14.2	4.5
SSW							0	0.0	
SW	14.2						1	14.2	.9
WSW							0	0.0	
W							0	0.0	
WNW		14.2					1	14.2	4.5
NW		28.5					2	28.5	4.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	42.6	56.9					7		3.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

100 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	1.7
SE	10.0						1	10.0	2.8
SSE	10.0						1	10.0	.8
S	20.0						2	20.0	1.7
SSW	10.0						1	10.0	1.2
SW							0	0.0	
WSW	10.0						1	10.0	1.9
W	10.0						1	10.0	.6
WNW	10.0						1	10.0	1.9
NW							0	0.0	
NNW		10.0					1	10.0	5.2
CALM							0	0.0	
COL. TOTALS	90.0	10.0					10		1.9

100 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	14.2						1	14.2	.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	14.2						1	14.2	2.5
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			14.2				1	14.2	6.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	14.2						1	14.2	1.5
WNW			14.2				1	14.2	7.3
NW		28.5					2	28.5	4.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	42.6	28.5	28.4				7		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

200 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0	10.0					2	20.0	3.6
SSE	20.0						2	20.0	.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		10.0					1	10.0	3.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	20.0	10.0	10.0				4	40.0	3.1
CALM							0	0.0	
COL. TOTALS	60.0	30.0	10.0				10		2.7

200 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		14.2					1	14.2	4.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		14.2					1	14.2	4.8
SSW							0	0.0	
SW	14.2						1	14.2	1.1
WSW							0	0.0	
W							0	0.0	
WNW			14.2				1	14.2	9.2
NW			28.5				2	28.5	7.9
NNW	14.2						1	14.2	1.3
CALM							0	0.0	
COL. TOTALS	28.4	28.4	42.7				7		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

300 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	2.5
NE							0	0.0	
ENE	10.0						1	10.0	.4
E							0	0.0	
ESE							0	0.0	
SE			10.0				1	10.0	6.1
SSE		10.0					1	10.0	4.5
S	10.0						1	10.0	.7
SSW							0	0.0	
SW							0	0.0	
WSW	10.0	20.0					3	30.0	2.8
W							0	0.0	
WNW							0	0.0	
NW		10.0					1	10.0	3.7
NNW		10.0					1	10.0	4.3
CALM							0	0.0	
COL. TOTALS	40.0	50.0	10.0				10		3.0

300 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	14.2						1	14.2	1.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		14.2					1	14.2	3.1
W	28.5						2	28.5	1.1
WNW			14.2				1	14.2	9.9
NW			14.2				1	14.2	8.4
NNW				14.2			1	14.2	14.7
CALM							0	0.0	
COL. TOTALS	42.7	14.2	28.4	14.2			7		5.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

500 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	20.0	10.0					3	30.0	2.4
SSE	10.0						1	10.0	2.7
S							0	0.0	
SSW		10.0					1	10.0	3.6
SW		10.0					1	10.0	5.6
WSW		10.0					1	10.0	4.1
W		20.0					2	20.0	4.4
WNW							0	0.0	
NW							0	0.0	
NNW		10.0					1	10.0	4.4
CALM							0	0.0	
COL. TOTALS	30.0	70.0					10		3.6

500 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	14.2						1	14.2	2.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		14.2					1	14.2	3.2
W	14.2						1	14.2	1.4
WNW	14.2		14.2				2	28.4	4.6
NW			14.2				1	14.2	7.1
NNW			14.2				1	14.2	6.2
CALM							0	0.0	
COL. TOTALS	42.6	14.2	42.6				7		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

750 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0			10.0			2	20.0	9.2
SSW			10.0				1	10.0	6.4
SW			10.0				1	10.0	7.0
WSW	10.0		10.0	10.0			3	30.0	6.6
W		10.0	10.0				2	20.0	5.6
WNW							0	0.0	
NW		10.0					1	10.0	3.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	40.0	20.0			10		6.6

750 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		14.2					1	14.2	3.4
SSW							0	0.0	
SW							0	0.0	
WSW		14.2					1	14.2	3.9
W			14.2				1	14.2	8.2
WNW		14.2	14.2				2	28.4	6.3
NW			14.2	14.2			2	28.4	9.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		42.6	42.6	14.2			7		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		10.0					1	10.0	5.0
S							0	0.0	
SSW			10.0	10.0			2	20.0	11.0
SW	10.0			10.0			2	20.0	5.6
WSW			10.0				1	10.0	9.9
W		10.0					1	10.0	4.9
WNW			20.0				2	20.0	7.3
NW		10.0					1	10.0	5.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	30.0	40.0	20.0			10		7.3

1000 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	14.2						1	14.2	2.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		14.2					1	14.2	5.2
WNW			28.5		14.2		3	42.7	12.3
NW			14.2		14.2		2	28.4	11.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	14.2	42.7		28.4		7		9.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

1500 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				12.5			1	12.5	10.1
SW	12.5		12.5				2	25.0	4.7
WSW			12.5	12.5			2	25.0	9.8
W		12.5	12.5		12.5		3	37.5	9.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	12.5	37.5	25.0	12.5		8		8.5

1500 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		20.0					1	20.0	5.6
WSW							0	0.0	
W				20.0			1	20.0	13.1
WNW			20.0	20.0			2	40.0	10.7
NW						20.0	1	20.0	28.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	20.0	40.0		20.0	5		13.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

2000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					16.6		1	16.6	20.1
WSW	16.6						1	16.6	1.2
W				16.6	16.6		2	33.2	15.0
WNW				16.6			1	16.6	15.7
NW		16.6					1	16.6	4.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	16.6		33.2	33.2		6		11.8

2000 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				50.0			1	50.0	10.0
NW						50.0	1	50.0	27.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				50.0		50.0	2		18.5

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MONTH OF APRIL 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100		5.0		10.0	5.0	5.0	5.0	15.0				45.0
101-250	5.0	5.0		10.0				10.0				30.0
251-500	20.0	5.0										25.0
501-750												
TOTAL	25.0	15.0		20.0	5.0	5.0	5.0	25.0				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				20

INVERSION TYPE												
1		5.0		20.0	5.0	5.0	5.0	25.0				65.0
2	10.0	10.0										20.0
3	15.0											15.0
4												
5												

MONTH OF APRIL 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100							21.4	7.1				28.5
101-250					7.1	7.1	21.4	14.2				49.8
251-500												
501-750												
TOTAL					7.1	7.1	42.8	21.3				
NO INVERSION												21.0
								TOTAL NO. OF OCCURENCES				11

INVERSION TYPE												
1					9.0	9.0	45.4	27.2				90.6
2												
3							9.0					9.0
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: BUTTE - AIRPORT - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR APRIL 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	3	0
101- 250	3	0
251- 500	3	0
501- 750	1	1
751-1000	0	1
1001-1500	2	3
>1500	0	3
TOTAL	12	8
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.6	7.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.84	-00.84

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		20.0					1	20.0	3.1
NE							0	0.0	
ENE	20.0						1	20.0	.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	20.0						1	20.0	.4
SW							0	0.0	
WSW		20.0					1	20.0	4.7
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	20.0	
COL. TOTALS	40.0	40.0					5		1.7

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	.4
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	.4
ESE							0	0.0	
SE							0	0.0	
SSE	16.6						2	16.6	.5
S							0	0.0	
SSW							0	0.0	
SW	25.0						3	25.0	.8
WSW			8.3				1	8.3	7.8
W	8.3	8.3					2	16.6	3.8
WNW							0	0.0	
NW	8.3						1	8.3	.9
NNW	8.3						1	8.3	.4
CALM							0	0.0	
COL. TOTALS	83.1	8.3	8.3				12		1.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	20.0						1	20.0	1.0
E							0	0.0	
ESE							0	0.0	
SE	20.0						1	20.0	1.2
SSE							0	0.0	
S	20.0						1	20.0	.7
SSW							0	0.0	
SW			20.0	20.0			2	40.0	8.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0		20.0	20.0			5		4.1

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	16.6						2	16.6	1.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	.6
SSE							0	0.0	
S	8.3						1	8.3	.8
SSW	8.3						1	8.3	1.3
SW	16.6		8.3				3	24.9	3.0
WSW	8.3		8.3				2	16.6	4.3
W	8.3		8.3				2	16.6	3.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	74.7		24.9				12		2.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	20.0						1	20.0	1.5
E	20.0						1	20.0	.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				20.0			1	20.0	15.8
WSW							0	0.0	
W			20.0				1	20.0	9.0
WNW							0	0.0	
NW	20.0						1	20.0	2.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0		20.0	20.0			5		5.8

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		8.3					1	8.3	3.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	.3
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	1.2
WSW	8.3			8.3			2	16.6	7.4
W	8.3		16.6				3	24.9	6.6
WNW	16.6						2	16.6	1.6
NW	8.3						1	8.3	1.8
NNW	8.3						1	8.3	2.6
CALM							0	0.0	
COL. TOTALS	66.4	8.3	16.6	8.3			12		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	20.0						1	20.0	.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			20.0			20.0	2	40.0	16.7
WSW							0	0.0	
W			20.0				1	20.0	7.4
WNW							0	0.0	
NW	20.0						1	20.0	2.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0		40.0			20.0	5		8.6

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	1.5
E							0	0.0	
ESE	8.3						1	8.3	2.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	8.3						1	8.3	.8
SW	8.3		8.3				2	16.6	4.3
WSW	8.3				8.3		2	16.6	10.0
W	8.3	8.3		8.3			3	24.9	5.2
WNW	8.3	8.3					2	16.6	3.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	58.1	16.6	8.3	8.3	8.3		12		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	20.0						1	20.0	1.7
ESE	20.0						1	20.0	1.1
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		20.0					1	20.0	5.1
WSW		20.0					1	20.0	4.6
W		20.0					1	20.0	4.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	60.0					5		3.4

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.1
NNE							0	0.0	
NE	8.3						1	8.3	2.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		8.3					1	8.3	4.8
SW		16.6					2	16.6	4.5
WSW		8.3	8.3				2	16.6	7.3
W	8.3	8.3	8.3				3	24.9	3.8
WNW		8.3					1	8.3	4.0
NW	8.3						1	8.3	1.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	49.8	16.6				12		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		25.0					1	25.0	4.1
SSW							0	0.0	
SW							0	0.0	
WSW			25.0				1	25.0	6.5
W			25.0				1	25.0	9.8
WNW	25.0						1	25.0	2.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	25.0	50.0				4		5.7

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0	9.0				2	18.0	6.8
SW							0	0.0	
WSW		9.0	18.1		9.0		4	36.1	10.2
W			36.3				4	36.3	8.4
WNW	9.0						1	9.0	1.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	18.0	63.4		9.0		11		8.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						1	25.0	1.0
WSW				50.0			2	50.0	13.4
W				25.0			1	25.0	11.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0			75.0			4		9.8

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			10.0				1	10.0	9.9
SSW							0	0.0	
SW		10.0	10.0				2	20.0	5.9
WSW				10.0			1	10.0	14.6
W		10.0	10.0	20.0			4	40.0	8.8
WNW			10.0				1	10.0	8.5
NW							0	0.0	
NNW		10.0					1	10.0	3.6
CALM							0	0.0	
COL. TOTALS		30.0	40.0	30.0			10		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		25.0					1	25.0	4.7
SSW							0	0.0	
SW							0	0.0	
WSW				50.0			2	50.0	14.1
W							0	0.0	
WNW				25.0			1	25.0	12.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0		75.0			4		11.4

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5						1	12.5	2.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			12.5				1	12.5	8.4
WSW		12.5	12.5	12.5			3	37.5	9.2
W							0	0.0	
WNW				12.5	12.5		2	25.0	16.3
NW					12.5		1	12.5	19.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	12.5	25.0	25.0	25.0		8		11.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		100.0					1	100.0	3.6
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		100.0					1		3.6

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							1	25.0	3.7
SSW		25.0					1	25.0	11.7
SW				25.0			0	0.0	
WSW							0	0.0	
W							1	25.0	7.0
WNW			25.0				1	25.0	13.9
NW				25.0			0	0.0	
NNW							0	0.0	
CALM							4	0.0	
COL. TOTALS		25.0	25.0	50.0					9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	20.0						1	20.0	1.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		20.0					1	20.0	3.1
W							0	0.0	
WNW							0	0.0	
NW		20.0					1	20.0	4.5
NNW							0	0.0	
CALM							2	40.0	
COL. TOTALS	20.0	40.0					5		1.8

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		33.3					1	33.3	4.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	33.3						1	33.3	1.8
WNW							0	0.0	
NW	33.3						1	33.3	.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	33.3					3		2.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	40.0						2	40.0	1.5
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		20.0					1	20.0	4.5
W							0	0.0	
WNW	20.0						1	20.0	.7
NW			20.0				1	20.0	6.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	60.0	20.0	20.0				5		2.8

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		33.3		33.3			2	66.6	8.5
WNW							0	0.0	
NW	33.3						1	33.3	1.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3		33.3			3		6.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	20.0						1	20.0	1.4
SSE	20.0						1	20.0	1.9
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		20.0					1	20.0	5.8
W							0	0.0	
WNW							0	0.0	
NW			20.0				1	20.0	6.9
NNW	20.0						1	20.0	2.0
CALM							0	0.0	
OL. TOTALS	60.0	20.0	20.0				5		3.6

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				33.3			1	33.3	10.7
W							0	0.0	
WNW		33.3					1	33.3	5.8
NW							0	0.0	
NNW	33.3						1	33.3	1.1
CALM							0	0.0	
COL. TOTALS	33.3	33.3		33.3			3		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - FIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	20.0						1	20.0	2.3
SSW							0	0.0	
SW							0	0.0	
WSW		20.0	20.0				2	40.0	5.3
W							0	0.0	
WNW	20.0	20.0					2	40.0	2.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	40.0	20.0				5		3.4

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			33.3				1	33.3	8.7
W							0	0.0	
WNW			33.3				1	33.3	8.9
NW	33.3						1	33.3	1.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		66.6				3		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - FIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			20.0				1	20.0	7.5
SSW		20.0					1	20.0	3.1
SW							0	0.0	
WSW		20.0					1	20.0	3.5
W		20.0					1	20.0	5.7
WNW			20.0				1	20.0	7.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		60.0	40.0				5		5.5

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	33.3						1	33.3	1.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			33.3				1	33.3	6.9
W							0	0.0	
WNW			33.3				1	33.3	9.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		66.6				3		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			20.0	20.0			2	40.0	9.7
WSW				20.0			1	20.0	10.1
W			20.0				1	20.0	9.1
WNW				20.0			1	20.0	13.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			40.0	60.0			5		10.3

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	33.3						1	33.3	1.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				33.3			1	33.3	12.7
NW	33.3						1	33.3	2.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6			33.3			3		5.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	10.0
WSW				25.0			1	25.0	11.2
W							0	0.0	
WNW				50.0			2	50.0	12.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			4		11.3

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		50.0					1	50.0	5.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			50.0				1	50.0	9.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	50.0				2		7.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - PIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							2	100.0	
COL. TOTALS							2		

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	50.0						1	50.0	.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	50.0						1	50.0	.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						2		.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - PIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	50.0						1	50.0	1.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	50.0						1	50.0	.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						2		.9

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	50.0						1	50.0	.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		50.0					1	50.0	4.2
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		2.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - PIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********							
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	50.0						1	50.0	1.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	50.0						1	50.0	.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						2		1.2

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********							
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	50.0						1	50.0	.8
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			50.0				1	50.0	7.0
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0		50.0				2		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - PIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********							
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	50.0						1	50.0	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	50.0						1	50.0	.5
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						2		1.0

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********							
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	50.0						1	50.0	2.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			50.0				1	50.0	6.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0		50.0				2		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	50.0						1	50.0	1.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				50.0			1	50.0	12.2
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0			50.0			2		6.6

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	50.0						1	50.0	1.2
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		50.0					1	50.0	4.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				50.0			1	50.0	10.4
WSW	50.0						1	50.0	2.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0			50.0			2		6.6

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			50.0				1	50.0	6.6
WSW							0	0.0	
W	50.0						1	50.0	2.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0		50.0				2		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	33.3						1	33.3	.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	33.3						1	33.3	.2
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	33.0	
COL. TOTALS	66.6						3		.3

SURFACE WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	16.6						1	16.6	2.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	33.3						2	33.3	.8
WSW							0	0.0	
W	16.6						1	16.6	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							2	33.0	
COL. TOTALS	66.5						6		.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	33.3						1	33.3	.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		33.3	33.3				2	66.6	7.3
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	33.3				3		5.0

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	16.6						1	16.6	.6
NE							0	0.0	
ENE	16.6						1	16.6	.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				16.6			1	16.6	14.1
WSW		16.6					1	16.6	3.5
W		16.6					1	16.6	3.5
WNW							0	0.0	
NW	16.6						1	16.6	.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	33.2		16.6			6		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	33.3						1	33.3	.6
SSW							0	0.0	
SW			33.3				1	33.3	6.3
WSW				33.3			1	33.3	10.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		33.3	33.3			3		5.9

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						1	16.6	2.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	16.6	16.6		16.6			3	49.8	6.7
W			16.6				1	16.6	6.0
WNW							0	0.0	
NW							0	0.0	
NNW	16.6						1	16.6	2.4
CALM							0	0.0	
COL. TOTALS	49.8	16.6	16.6	16.6			6		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	33.3						1	33.3	1.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			33.3	33.3			2	66.6	8.9
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		33.3	33.3			3		6.3

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	16.6	16.6	16.6		16.6		4	66.4	7.9
W							0	0.0	
WNW							0	0.0	
NW		16.6					1	16.6	4.4
NNW	16.6						1	16.6	.5
CALM							0	0.0	
COL. TOTALS	33.2	33.2	16.6		16.6		6		6.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - MIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		33.3					1	33.3	3.3
SW			33.3				1	33.3	8.1
WSW			33.3				1	33.3	9.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	66.6				3		6.9

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			16.6				1	16.6	6.8
S							0	0.0	
SSW							0	0.0	
SW			16.6				1	16.6	9.4
WSW	16.6		16.6				2	33.2	5.3
W			16.6				1	16.6	6.8
WNW		16.6					1	16.6	4.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	16.6	66.4				6		6.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - MIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	33.3						1	33.3	.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			33.3				1	33.3	9.2
SW			33.3				1	33.3	6.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		66.6				3		5.3

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				16.6			1	16.6	11.7
SSW							0	0.0	
SW			16.6				1	16.6	7.8
WSW						16.6	1	16.6	28.8
W		16.6	16.6				2	33.2	5.8
WNW			16.6				1	16.6	6.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	49.8	16.6		16.6	6		11.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				33.3			1	33.3	13.4
SW							0	0.0	
WSW				33.3			1	33.3	14.5
W		33.3					1	33.3	4.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3		66.6			3		10.7

1000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			20.0				1	20.0	9.2
SSW							0	0.0	
SW				20.0			1	20.0	10.7
WSW					20.0		1	20.0	18.6
W			20.0				1	20.0	7.9
WNW	20.0						1	20.0	2.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		40.0	20.0	20.0		5		9.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				50.0			1	50.0	11.1
WSW							0	0.0	
W					50.0		1	50.0	20.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				50.0	50.0		2		15.9

1500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	10.9
WSW					25.0		1	25.0	19.6
W		25.0					1	25.0	3.3
WNW					25.0		1	25.0	18.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0		25.0	50.0		4		13.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					100.0		1	100.0	19.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS					100.0		1		19.5

2000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW					50.0		1	50.0	21.7
WSW							0	0.0	
W							0	0.0	
WNW					50.0		1	50.0	23.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS					100.0		2		22.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	.2
NE	9.0						1	9.0	.7
ENE							0	0.0	
E	9.0						1	9.0	.2
ESE	9.0						1	9.0	.2
SE	27.2						3	27.2	.2
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0						1	9.0	1.8
WSW	9.0						1	9.0	.4
W	9.0						1	9.0	.9
WNW	9.0						1	9.0	.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.2						11		.5

SURFACE WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		11.1					1	11.1	4.5
NE	11.1						1	11.1	2.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	2.3
SSW							0	0.0	
SW	22.2						2	22.2	.2
WSW							0	0.0	
W	11.1						1	11.1	2.2
WNW	11.1						1	11.1	2.2
NW	11.1	11.1					2	22.2	2.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	77.7	22.2					9		2.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	18.1						2	18.1	1.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	27.2						3	27.2	1.2
SE	9.0						1	9.0	1.7
SSE							0	0.0	
S	9.0						1	9.0	2.1
SSW							0	0.0	
SW							0	0.0	
WSW	18.1	18.1					4	36.2	3.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.4	18.1					11		2.0

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		11.1					1	11.1	5.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1	11.1					2	22.2	2.4
SSW							0	0.0	
SW	11.1						1	11.1	1.4
WSW	11.1		11.1				2	22.2	4.3
W							0	0.0	
WNW			11.1				1	11.1	7.0
NW							0	0.0	
NNW	22.2						2	22.2	1.2
CALM							0	0.0	
COL. TOTALS	55.5	22.2	22.2				9		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	18.1						2	18.1	.8
E	18.1						2	18.1	2.1
ESE	9.0						1	9.0	1.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	4.2
SW		9.0					1	9.0	4.6
WSW		18.1					2	18.1	3.8
W	9.0						1	9.0	2.0
WNW							0	0.0	
NW							0	0.0	
NNW	9.0						1	9.0	1.7
CALM							0	0.0	
COL. TOTALS	63.2	36.1					11		2.4

200 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.7
NNE							0	0.0	
NE	11.1						1	11.1	.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	.5
S			11.1				1	11.1	8.0
SSW	11.1						1	11.1	1.5
SW			11.1				1	11.1	9.8
WSW	11.1						1	11.1	2.6
W							0	0.0	
WNW	11.1		11.1				2	22.2	5.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6		33.3				9		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.7
ENE		9.0					1	9.0	4.1
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	1.3
SSE							0	0.0	
S		9.0					1	9.0	5.3
SSW							0	0.0	
SW	9.0	27.2					4	36.2	3.5
WSW	9.0						1	9.0	2.0
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	18.1						2	18.1	1.2
CALM							0	0.0	
COL. TOTALS	54.1	45.2					11		2.7

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	2.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	.8
S	11.1		11.1				2	22.2	5.0
SSW							0	0.0	
SW		11.1					1	11.1	3.6
WSW		11.1					1	11.1	4.0
W							0	0.0	
WNW	11.1		11.1				2	22.2	5.5
NW							0	0.0	
NNW	11.1						1	11.1	.4
CALM							0	0.0	
COL. TOTALS	55.5	22.2	22.2				9		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		9.0					1	9.0	5.2
E							0	0.0	
ESE		9.0					1	9.0	4.4
SE	9.0						1	9.0	1.6
SSE							0	0.0	
S	9.0	9.0	9.0				3	27.0	4.9
SSW							0	0.0	
SW			9.0				1	9.0	6.8
WSW		18.1	9.0				3	27.1	5.5
W		9.0					1	9.0	3.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	54.1	27.0				11		4.8

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	11.1						1	11.1	2.3
SSE							0	0.0	
S							0	0.0	
SSW				11.1			1	11.1	10.2
SW	11.1	11.1	11.1				3	33.3	4.6
WSW							0	0.0	
W		11.1					1	11.1	3.3
WNW	11.1		11.1				2	22.2	5.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	22.2	22.2	11.1			9		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				9.0			1	9.0	11.2
SSW		18.1	9.0				3	27.1	4.8
SW			9.0				1	9.0	7.7
WSW		9.0	18.1				3	27.1	6.6
W			9.0				1	9.0	8.5
WNW							0	0.0	
NW							0	0.0	
NNW		9.0					1	9.0	4.3
CALM							0	0.0	
COL. TOTALS		45.1	45.1	9.0			11		6.3

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	1.2
SE							0	0.0	
SSE							0	0.0	
S		11.1					1	11.1	3.6
SSW			11.1				1	11.1	7.4
SW			11.1				1	11.1	7.7
WSW		11.1					1	11.1	4.3
W	11.1		11.1				2	22.2	3.9
WNW		11.1					1	11.1	4.7
NW							0	0.0	
NNW		11.1					1	11.1	4.1
CALM							0	0.0	
COL. TOTALS	22.2	44.4	33.3				9		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			9.0				1	9.0	6.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				9.0			1	9.0	12.8
SSW							0	0.0	
SW		9.0		9.0			2	18.0	7.0
WSW		9.0	18.1	9.0			4	36.1	8.4
W			9.0	9.0			2	18.0	9.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		27.0	36.1	36.0			11		8.1

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		14.2					1	14.2	3.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		14.2					1	14.2	4.2
SW							0	0.0	
WSW					14.2		1	14.2	16.0
W	14.2		14.2				2	28.4	4.9
WNW							0	0.0	
NW	14.2		14.2				2	28.4	4.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	28.4	28.4		14.2		7		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		12.5					1	12.5	5.0
NE							0	0.0	
ENE							0	0.0	
E	12.5						1	12.5	2.2
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		12.5	12.5				2	25.0	7.2
WSW		12.5			12.5		2	25.0	12.5
W			12.5			12.5	2	25.0	15.3
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0		12.5	12.5	8		10.6

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	20.0						1	20.0	2.0
SSW							0	0.0	
SW			20.0				1	20.0	6.6
WSW					20.0		1	20.0	16.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		20.0		20.0			2	40.0	9.1
CALM							0	0.0	
COL. TOTALS	20.0	20.0	20.0	20.0	20.0		5		8.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		16.6					1	16.6	3.0
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				16.6			1	16.6	14.5
WSW		16.6			16.6		2	33.2	14.1
W							0	0.0	
WNW		16.6	16.6				2	33.2	6.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		49.8	16.6	16.6	16.6		6		9.8

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				25.0			1	25.0	12.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			25.0				1	25.0	6.0
SW							0	0.0	
WSW							0	0.0	
W			25.0				1	25.0	7.9
WNW							0	0.0	
NW							0	0.0	
NNW				25.0			1	25.0	12.5
CALM							0	0.0	
COL. TOTALS			50.0	50.0			4		9.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	50.0						2	50.0	1.7
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	25.0						1	25.0	1.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						4		1.3

SURFACE WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	16.6						1	16.6	.9
SSE							0	0.0	
S		16.6					1	16.6	4.5
SSW							0	0.0	
SW	33.3						2	33.3	1.7
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW			33.3				2	33.3	7.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.9	16.6	33.3				6		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	50.0						2	50.0	1.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	25.0						1	25.0	.3
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	25.0						1	25.0	2.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						4		1.3

100 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	16.6						1	16.6	1.6
SSE							0	0.0	
S							0	0.0	
SSW		16.6					1	16.6	4.0
SW		33.3					2	33.3	3.3
WSW							0	0.0	
W							0	0.0	
WNW						16.6	1	16.6	38.1
NW			16.6				1	16.6	7.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	49.9	16.6			16.6	6		9.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	25.0						1	25.0	1.6
ENE							0	0.0	
E	25.0						1	25.0	.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						1	25.0	1.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						1	25.0	2.4
CALM							0	0.0	
COL. TOTALS	100.0						4		1.5

200 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	16.6						1	16.6	1.2
SSE							0	0.0	
S			16.6				1	16.6	6.5
SSW							0	0.0	
SW			16.6				1	16.6	6.7
WSW			16.6				1	16.6	7.6
W							0	0.0	
WNW						16.6	1	16.6	29.8
NW				16.6			1	16.6	13.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6		49.8	16.6		16.6	6		10.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	25.0						1	25.0	1.4
S							0	0.0	
SSW							0	0.0	
SW	25.0						1	25.0	2.6
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						1	25.0	2.6
CALM							0	0.0	
COL. TOTALS	100.0						4		1.7

300 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			16.6				1	16.6	6.0
SSW	16.6	16.6					2	33.2	2.7
SW							0	0.0	
WSW			16.6				1	16.6	6.4
W							0	0.0	
WNW							0	0.0	
NW					33.3		2	33.3	17.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	16.6	33.2		33.3		6		8.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	50.0	25.0					3	75.0	2.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		25.0					1	25.0	3.3
CALM							0	0.0	
COL. TOTALS	50.0	50.0					4		3.0

500 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE						16.6	1	16.6	38.2
SSE	16.6						1	16.6	.6
S							0	0.0	
SSW		16.6					1	16.6	4.2
SW	16.6						1	16.6	.9
WSW			16.6				1	16.6	7.8
W							0	0.0	
WNW							0	0.0	
NW					16.6		1	16.6	16.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	16.6	16.6		16.6	16.6	6		11.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			25.0				1	25.0	8.6
SW							0	0.0	
WSW		50.0					2	50.0	3.6
W							0	0.0	
WNW							0	0.0	
NW		25.0					1	25.0	4.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		75.0	25.0				4		5.1

750 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		25.0					1	25.0	5.1
S							0	0.0	
SSW	25.0		25.0				2	50.0	4.7
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	25.0						1	25.0	2.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0	25.0				4		4.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			25.0				1	25.0	9.5
WSW		25.0					1	25.0	
W			25.0				1	25.0	5.8
WNW		25.0					1	25.0	9.6
NW							1	25.0	4.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	50.0				4		7.3

1000 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			33.3				1	33.3	8.4
WSW		66.6					0	0.0	
W							2	66.6	5.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		66.6	33.3				3		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEBGEN PARK #1 - HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			50.0		50.0		1	50.0	11.2
WNW							1	50.0	6.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			50.0	50.0			2		9.0

1500 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		50.0					1	50.0	6.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW						50.0	1	50.0	26.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0				50.0	2		17.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: BUTTE - HEGGEN PARK #1 - HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				100.0			1	100.0	12.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			1		12.7

2000 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				100.0			1	100.0	13.2
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			1		13.2

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF FEBRUARY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	7	0	0	0	0	0	0	0	0	0	7
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	18	0	0	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	8	0	1	0	0	0	0	0	0	0	9
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											9
TOTAL	18	0	1	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	11	1	1	0	0	0	0	0	0	0	13
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	13	1	1	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	8	0	0	0	0	0	0	0	0	0	8
301-500	10	0	0	0	0	0	0	0	0	0	10
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	18	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	34	1	2	0	0	0	0	0	0	0	37
301-500	32	0	0	0	0	0	0	0	0	0	32
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											42
TOTAL	67	1	2	0	0	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF FEBUARY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	1	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											111
TOTAL	0	0	1	0	0	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF FEBUARY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	D	D	E	E	M	M
2	M	M	D	M	E	D	D	D	D	M	M	M
3	M	M	M	M	E	D	D	D	E	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	E	E	M	M	M	D	E	E	E	E	E
6	M	M	M	M	M	D	D	D	D	M	M	M
7	M	M	M	M	M	M	D	E	D	E	M	D
8	D	D	E	D	D	D	D	M	M	M	M	M
9	M	M	D	D	E	E	D	M	D	M	M	M
10	M	M	M	M	D	D	D	D	D	D	D	D
11	D	D	D	D	D	D	D	D	D	D	D	D
12	M	M	M	E	M	M	M	E	E	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	D	D	D
15	D	D	D	D	M	M	M	M	M	E	M	M
16	D	D	D	D	D	M	M	C	D	M	M	M
17	M	M	M	M	M	M	D	D	D	M	M	M
18	D	M	M	M	D	D	D	D	D	E	E	D
19	D	D	E	E	E	E	D	E	E	D	E	E
20	E	M	M	M	E	E	D	D	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	E	E
22	M	M	M	M	M	M	C	D	D	M	M	M
23	M	M	M	M	D	D	D	C	C	M	M	M
24	D	D	D	D	D	D	D	D	D	D	D	D
25	D	D	D	D	D	B	C	E	D	D	D	D
26	D	D	M	M	M	M	D	M	M	M	M	M
27	M	M	D	D	D	D	B	D	D	D	D	D
28	D	D	D	D	M	M	D	C	E	M	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.6 % C= 1.8 % D=35.7 % E=11.9 % F= 0.0 %

U= 0.0 % M=50.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF MARCH 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	14	1	1	0	0	0	0	0	0	0	16
301-500	9	0	0	1	0	0	0	0	0	0	10
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	24	1	1	1	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	11	1	1	1	0	0	0	0	0	0	14
301-500	10	0	0	0	0	0	0	0	0	0	10
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	21	1	1	1	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	3	0	0	0	1	0	0	0	0	0	4
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	4	0	0	0	1	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	12	0	0	0	1	0	0	0	0	0	13
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	21	0	0	0	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	40	2	2	1	2	0	0	0	0	0	47
301-500	28	0	0	1	0	0	0	0	0	0	29
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											46
TOTAL	70	2	2	2	2	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF MARCH 1978

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											124
TOTAL	0	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF MARCH 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	D	D	C	E	D	D	D	M
2	M	M	M	M	M	D	E	E	E	E	E	E
3	E	M	M	M	M	M	M	M	M	M	M	D
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	D	M	M	M	M	D	D	M	D	M	D
6	D	M	M	D	D	D	D	D	E	M	M	M
7	M	M	M	M	M	M	M	D	D	M	M	M
8	M	M	M	M	M	M	D	M	M	M	M	M
9	M	M	M	M	D	D	D	D	D	E	M	M
10	M	M	M	M	D	B	M	D	D	M	M	M
11	M	M	M	M	M	D	C	C	D	M	M	M
12	M	M	M	M	M	D	E	E	D	D	D	D
13	E	M	D	D	C	C	C	D	D	D	D	D
14	E	E	E	D	C	C	C	D	D	E	M	M
15	M	M	M	M	E	C	C	C	D	D	E	E
16	M	M	M	M	E	D	C	C	C	M	E	E
17	M	M	M	M	D	D	D	D	D	D	E	E
18	E	E	E	M	D	D	D	D	E	M	M	M
19	M	M	M	M	E	D	M	M	M	M	M	M
20	M	M	M	M	D	C	C	C	D	M	M	M
21	M	M	M	M	D	C	M	C	C	M	M	M
22	E	E	E	E	D	C	C	C	D	E	E	E
23	M	E	E	M	M	D	C	C	D	D	E	E
24	E	M	M	E	C	C	C	C	D	M	E	E
25	M	M	M	M	M	D	C	C	D	M	E	E
26	M	D	M	M	E	C	C	C	D	E	M	M
27	M	M	M	M	M	D	C	C	D	M	M	M
28	M	M	M	M	D	M	M	C	D	D	E	E
29	M	M	M	M	M	D	C	C	D	E	M	M
30	M	M	M	M	M	D	C	C	D	E	M	M
31	D	M	M	M	M	C	C	C	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.3 % C=12.4 % D=23.1 % E=14.2 % F= 0.0 %

U= 0.0 % M=50.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF APRIL 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	4	0	1	0	0	0	0	0	0	0	5
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											16
TOTAL	13	0	1	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	6	1	0	1	1	0	0	0	0	0	9
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											17
TOTAL	10	1	0	1	1	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	1	0	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	1	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	4	0	1	0	0	0	0	0	0	0	5
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											17
TOTAL	12	0	1	0	0	0	0	0	0	0	30
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	15	1	2	1	1	0	0	0	0	0	20
301-500	20	0	0	0	0	0	0	0	0	0	20
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											79
TOTAL	36	1	2	1	1	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF APRIL 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	1	0	1	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	1	0	1	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	1	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	1	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	1	0	2	0	0	0	3
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											117
TOTAL	0	0	0	0	1	0	2	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF APRIL 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M
4	E	M	M	M	D	C	E	E	D	M	M	M
5	M	E	E	D	C	C	C	C	D	E	M	M
6	M	M	M	M	E	D	C	C	D	D	D	D
7	D	D	E	M	M	D	D	D	M	E	M	M
8	D	D	D	M	E	C	C	C	D	D	E	E
9	E	D	D	M	C	C	C	C	D	E	E	E
10	M	M	M	M	D	C	C	C	D	D	M	M
11	M	D	D	D	D	D	D	D	D	E	M	M
12	E	M	M	D	C	C	C	C	D	D	M	M
13	M	M	M	D	C	C	C	C	D	D	M	M
14	E	E	E	M	E	E	C	C	E	E	E	E
15	M	M	M	E	E	D	C	C	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	B	C	C	D	E	E
19	M	E	E	M	D	C	C	C	D	E	E	E
20	E	E	E	M	D	C	C	D	M	M	D	D
21	D	D	D	E	D	D	D	D	D	E	E	E
22	E	M	M	M	C	C	C	C	E	E	M	M
23	M	M	M	E	C	C	C	C	C	D	M	M
24	M	M	M	M	D	M	C	C	D	D	M	M
25	M	M	M	M	D	C	C	C	D	D	D	D
26	M	M	M	M	D	C	D	E	C	E	M	M
27	M	M	M	M	D	C	C	C	C	E	M	M
28	E	M	M	E	C	C	C	C	C	D	E	E
29	E	E	E	E	C	C	M	C	D	D	M	M
30	M	M	M	M	D	M	M	C	D	E	D	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.3 % C=18.1 % D=20.3 % E=16.4 % F= 0.0 %

U= 0.0 % M=45.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF MAY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	2	0	2	0	0	0	0	0	0	0	4
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											15
TOTAL	14	0	2	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	5	0	1	0	0	0	0	0	0	0	6
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											17
TOTAL	13	0	1	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	1	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	6	0	0	0	0	0	0	0	0	0	6
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											16
TOTAL	13	0	0	0	1	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	0	1	1	0	0	0	0	0	2
101-300	13	0	3	0	0	0	0	0	0	0	16
301-500	26	0	0	0	0	0	0	0	0	0	26
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											77
TOTAL	40	0	3	1	1	0	0	0	0	0	122

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF MAY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	1	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	1	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	1	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	2	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											120
TOTAL	0	0	0	0	2	0	0	0	0	0	122

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF MAY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	D	C	C	D	E	M	M
2	M	M	M	M	M	M	C	C	D	D	E	E
3	M	M	D	C	C	C	C	C	C	D	D	E
4	E	M	M	D	M	M	C	C	C	E	E	E
5	E	D	D	D	D	D	D	D	D	D	D	D
6	D	M	M	M	E	C	C	C	C	E	E	E
7	E	E	E	E	C	C	C	C	E	E	M	M
8	M	M	M	M	D	M	C	C	D	D	M	M
9	M	M	M	M	D	C	C	C	E	E	M	M
10	M	M	M	M	E	D	C	C	D	E	M	M
11	D	D	M	E	D	D	D	D	D	D	D	D
12	D	D	D	C	C	C	C	C	E	D	D	M
13	M	M	M	D	C	C	C	C	D	D	M	M
14	M	M	M	D	D	D	D	D	D	D	D	E
15	E	M	M	D	D	D	D	D	D	D	D	D
16	D	D	M	D	D	C	C	C	D	D	D	D
17	E	E	E	D	D	D	D	E	D	D	C	D
18	D	D	D	D	D	D	D	E	E	E	D	D
19	M	D	D	D	C	C	C	C	C	D	E	E
20	M	M	M	D	M	C	C	C	C	D	M	M
21	M	M	M	M	D	C	C	C	C	D	M	M
22	M	E	E	D	D	D	D	D	D	E	E	E
23	M	M	M	E	C	C	C	C	D	D	M	M
24	M	M	D	D	D	C	C	D	M	M	E	D
25	M	M	M	M	D	C	M	B	M	D	E	E
26	M	M	D	D	C	C	C	C	D	D	E	E
27	M	M	M	M	D	M	M	C	C	D	M	M
28	E	M	M	D	C	C	C	C	C	D	D	M
29	E	E	E	C	C	C	C	C	C	D	D	M
30	M	M	M	M	M	M	M	M	M	M	M	M
31	M	E	E	E	C	C	C	C	C	E	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.5 % C=22.0 % D=32.3 % E=14.5 % F= 0.0 %

U= 0.0 % M=30.6 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF JUNE 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	15	0	1	0	0	0	0	0	0	0	16
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	23	0	1	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	16	1	0	0	0	0	0	0	0	0	17
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	22	1	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	11	0	1	0	0	0	0	0	0	0	12
301-500	5	0	0	0	0	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	16	0	1	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	42	1	2	0	0	0	0	0	0	0	45
301-500	19	0	0	0	0	0	0	0	0	0	19
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											56
TOTAL	61	1	2	0	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF JUNE 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											120
TOTAL	0	0	0	0	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF JUNE 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	D	C	C	C	C	D	M	M
2	M	M	M	M	D	C	C	C	C	D	M	M
3	M	E	E	M	D	C	C	C	C	D	M	M
4	M	M	M	D	C	C	B	M	C	D	M	M
5	M	M	M	M	D	C	B	C	C	D	M	M
6	M	M	M	D	C	C	C	C	C	D	M	M
7	M	M	M	M	D	C	C	C	C	D	D	M
8	M	M	M	D	C	C	M	C	C	D	E	E
9	M	M	M	M	D	D	D	D	D	D	D	D
10	D	D	D	D	D	D	C	C	D	D	M	M
11	M	M	M	C	C	C	C	C	C	D	E	E
12	M	M	M	M	D	M	C	C	C	D	M	M
13	M	E	E	E	C	C	C	C	D	D	D	E
14	M	M	D	B	C	C	C	C	C	D	D	E
15	E	E	E	C	C	C	C	C	C	D	D	E
16	M	M	M	D	C	C	C	C	C	D	D	M
17	M	E	E	D	C	C	M	C	C	D	M	M
18	M	M	M	D	C	C	C	C	D	D	D	M
19	M	M	M	E	C	C	C	C	C	D	E	E
20	M	M	M	M	D	B	C	M	C	D	E	E
21	M	M	M	M	B	B	C	C	D	D	E	E
22	M	M	M	M	D	C	C	C	C	D	E	E
23	M	E	E	M	D	M	C	C	C	D	M	M
24	E	M	M	M	D	C	M	C	M	E	E	E
25	E	M	M	E	E	C	C	C	C	D	D	D
26	M	M	M	D	M	M	C	C	C	D	D	E
27	M	M	M	D	M	C	M	C	C	D	D	E
28	M	M	M	M	D	M	C	C	D	D	M	M
29	M	M	M	D	C	C	C	C	D	D	E	E
30	E	M	M	E	D	C	C	C	D	D	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.7 % C=29.7 % D=22.5 % E=11.4 % F= 0.0 %

U= 0.0 % M=34.7 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF JULY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	9	0	1	0	0	0	0	0	0	0	10
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	21	0	1	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											11
TOTAL	20	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											11
TOTAL	20	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	39	0	0	0	0	0	0	0	0	0	39
301-500	18	0	1	0	0	0	0	0	0	0	19
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											62
TOTAL	61	0	1	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF JULY 1978

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	1	0	0	1
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL		0	0	0	0	0	0	1	0	0	31
---TIME 601-1200 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	0	0	0	0
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL		0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	0	0	0	0
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL		0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	0	0	0	0
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL		0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100		0	0	0	0	0	0	0	0	0	0
101-300		0	0	0	0	0	0	1	0	0	1
301-500		0	0	0	0	0	0	0	0	0	0
501-900		0	0	0	0	0	0	0	0	0	0
NO INVERSION											123
TOTAL		0	0	0	0	0	0	1	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF JULY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	D	B	B	B	C	D	M	E	E
2	M	M	M	D	D	C	C	C	E	M	M	M
3	M	M	M	D	C	C	C	D	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	D	C	C	D	E	E
7	M	M	M	D	M	C	B	C	C	C	M	M
8	M	M	M	M	D	M	C	C	C	M	M	M
9	M	E	E	E	C	C	C	C	C	C	M	M
10	E	M	M	M	E	D	C	C	C	D	E	E
11	M	M	M	M	D	C	C	C	E	D	D	E
12	M	M	M	M	D	C	C	M	C	D	M	M
13	E	M	M	M	D	C	C	C	C	D	M	M
14	M	M	M	M	D	C	C	C	C	C	M	M
15	M	M	M	M	D	C	C	C	D	D	M	M
16	M	M	D	M	B	B	C	B	B	D	D	D
17	D	D	D	D	C	C	C	C	C	C	M	M
18	M	M	M	M	C	C	C	C	E	D	M	M
19	M	M	M	M	M	M	C	C	M	D	D	M
20	D	D	M	D	C	C	C	C	C	M	E	E
21	M	M	M	M	D	M	M	M	D	E	M	M
22	M	M	M	M	D	M	C	M	C	D	M	M
23	M	M	M	M	D	M	C	C	D	M	M	M
24	E	M	M	M	D	C	D	D	D	D	M	M
25	M	M	M	D	C	C	C	C	C	D	M	M
26	M	M	M	M	D	M	C	C	C	E	E	E
27	M	M	M	D	E	D	D	D	C	D	M	M
28	M	M	D	M	C	C	C	C	M	E	M	M
29	M	M	M	M	M	M	C	C	C	D	M	M
30	M	M	M	M	D	M	M	C	C	D	M	M
31	M	M	M	M	D	B	C	C	C	D	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 2.4 % C=25.1 % D=17.2 % E= 7.0 % F= 0.0 %

U= 0.0 % M=50.3 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BU
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF AUGUST 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	17	0	0	0	0	0	0	0	0	0	17
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											8
TOTAL	23	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	22	0	0	0	0	0	0	0	0	0	22
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											8
TOTAL	23	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	22	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	55	0	0	0	0	0	0	0	0	0	55
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											56
TOTAL	68	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF AUGUST 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	C	C	C	C	C	C
101-300	0	0	0	0	0	C	0	0	0	0	0
301-500	0	0	0	0	0	C	C	0	0	0	0
501-900	0	0	0	0	0	C	C	C	0	C	C
NO INVERSION											31
TOTAL	0	0	0	0	0	C	C	C	C	C	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	C	0	0	0	0	0
101-300	0	0	0	0	0	C	0	0	0	0	0
301-500	0	0	0	0	0	C	0	0	C	C	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	C	C	C	0	0	0	0
101-300	0	0	0	0	0	0	C	0	0	0	0
301-500	0	0	0	0	0	0	C	0	0	0	0
501-900	0	0	0	0	C	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	C	C	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	C	0	C	C	0	C	0
101-300	0	0	0	0	0	0	C	C	C	0	0
301-500	0	0	0	0	0	0	C	0	0	0	0
501-900	0	0	0	0	C	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	C	C	0	C	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	C	C	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											124
TOTAL	0	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF AUGUST 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	D	M	M	M	C	C	C	D	E
2	M	M	M	M	D	C	C	C	C	D	E	E
3	M	M	M	M	D	B	C	C	C	C	D	M
4	M	M	M	M	M	D	C	C	C	D	M	M
5	M	M	M	D	C	C	C	C	D	M	E	E
6	M	M	M	M	D	C	C	C	C	D	E	E
7	E	M	M	M	D	C	C	C	D	D	D	E
8	M	M	M	M	D	C	C	M	C	D	D	M
9	M	M	M	M	D	C	C	B	B	D	D	M
10	M	M	M	M	D	C	C	C	C	D	D	M
11	M	M	M	M	D	C	C	C	D	D	E	E
12	M	M	M	M	D	B	M	C	D	D	D	M
13	E	E	E	D	D	D	D	C	D	M	M	M
14	M	M	M	D	C	C	C	C	C	D	D	D
15	D	D	D	D	D	C	C	C	D	D	E	E
16	D	M	D	C	M	M	C	C	C	D	E	E
17	M	M	M	D	D	D	D	D	C	D	D	M
18	M	M	M	M	D	C	C	C	C	M	M	M
19	M	M	M	M	D	B	C	C	D	E	M	M
20	M	M	M	M	D	M	C	C	D	E	M	M
21	M	M	M	M	D	B	M	C	E	M	M	M
22	E	E	D	M	E	C	D	C	C	B	C	M
23	M	M	M	D	C	C	C	C	D	M	M	M
24	M	M	M	M	D	B	C	C	C	D	M	M
25	E	M	M	M	D	M	C	C	D	D	E	E
26	M	M	M	M	D	M	C	C	D	E	M	D
27	D	M	M	M	C	C	C	C	C	D	E	E
28	M	M	M	M	D	B	C	C	C	D	M	M
29	M	M	M	M	D	B	B	C	D	M	M	M
30	M	M	M	M	D	M	C	C	D	M	M	M
31	M	M	M	M	D	C	C	C	C	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 3.0 % C=24.5 % D=22.8 % E= 8.1 % F= 0.0 %

U= 0.0 % M=41.7 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF SEPT. 1976

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	6	0	0	0	0	0	0	0	0	0	6
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	4	0	0	0	0	0	0	0	0	0	4
NO INVERSION											8
TOTAL	22	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	12	0	1	0	0	0	0	0	0	0	13
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											9
TOTAL	20	0	1	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	12	0	0	0	0	0	0	0	0	0	12
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	21	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	30	0	1	0	0	0	0	0	0	0	31
301-500	28	0	0	0	0	0	0	0	0	0	28
501-900	5	0	0	0	0	0	0	0	0	0	5
NO INVERSION											56
TOTAL	63	0	1	0	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF SEPT. 1976

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											120
TOTAL	0	0	0	0	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF SEPT. 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	D	D	D	D	D	D	M	M
2	M	E	E	M	D	B	B	C	D	M	M	M
3	E	M	M	E	D	C	C	C	C	M	E	E
4	M	M	M	M	D	C	C	C	C	M	M	M
5	D	D	M	D	D	D	D	D	D	D	D	M
6	M	D	D	M	M	B	M	C	C	C	M	M
7	M	M	M	M	E	D	D	D	D	E	E	E
8	M	M	M	E	E	C	C	C	D	M	M	M
9	M	M	M	M	D	C	C	C	D	D	D	D
10	E	M	M	M	D	D	D	D	D	D	D	D
11	D	D	D	D	D	D	D	D	D	D	D	C
12	D	D	D	D	D	D	D	D	D	D	D	D
13	M	M	M	M	M	C	C	C	D	M	M	M
14	M	E	E	M	D	C	C	C	C	D	M	M
15	M	M	M	D	D	D	D	D	D	D	D	D
16	D	D	E	D	C	C	C	C	D	E	M	M
17	M	M	M	M	D	M	C	C	D	E	E	E
18	E	D	D	D	D	D	D	D	D	D	M	M
19	M	M	M	M	D	M	C	C	M	M	M	M
20	M	M	M	M	D	C	C	C	D	M	M	M
21	M	M	M	M	D	M	C	C	D	E	M	M
22	M	M	M	M	D	C	C	C	D	M	M	M
23	M	M	M	M	D	C	C	C	D	E	M	M
24	M	M	M	M	M	D	C	C	C	M	M	M
25	M	M	M	M	M	D	C	C	D	M	M	M
26	M	M	M	M	M	D	C	C	D	M	M	M
27	M	M	M	M	M	D	C	C	D	E	M	M
28	M	M	M	M	D	D	M	D	D	E	E	E
29	E	E	E	D	C	C	C	C	C	M	E	E
30	M	M	M	M	M	D	B	C	D	D	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.1 % C=16.4 % D=32.5 % E= 8.9 % F= 0.0 %

U= 0.0 % M=41.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF OCTOBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	13	0	0	0	0	0	0	0	0	0	13
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	27	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	26	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											16
TOTAL	15	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	26	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	62	0	0	0	0	0	0	0	0	0	62
301-500	29	0	0	0	0	0	0	0	0	0	29
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	94	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF OCTOBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											124
TOTAL	0	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF OCTOBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	E	C	C	C	C	D	E	E	E
2	M	M	M	M	D	C	C	C	D	M	M	M
3	M	M	M	M	M	D	M	C	D	D	D	D
4	M	E	E	M	D	C	C	C	C	E	M	M
5	M	M	M	M	D	M	C	C	E	M	M	M
6	M	M	M	M	D	B	B	C	D	M	M	M
7	M	M	M	M	M	D	C	C	D	M	M	M
8	M	M	M	M	D	C	C	C	D	E	E	E
9	M	M	M	M	M	D	C	C	D	M	M	M
10	M	M	M	D	D	D	D	D	D	D	D	D
11	D	D	D	D	C	C	C	C	E	E	E	D
12	D	D	E	E	C	C	C	C	D	M	M	M
13	M	M	M	M	M	D	C	C	C	E	M	M
14	M	M	M	M	M	D	C	C	C	M	M	M
15	M	M	M	M	M	D	C	B	D	M	M	M
16	M	M	M	M	M	D	C	C	D	M	D	D
17	M	M	M	M	M	D	C	C	C	E	M	M
18	M	M	M	M	M	C	C	B	M	M	M	M
19	M	M	M	M	M	D	C	C	D	M	M	M
20	M	M	M	D	D	C	C	C	E	M	M	D
21	M	M	M	D	D	C	C	C	D	E	E	E
22	M	M	M	M	M	D	B	M	M	M	M	M
23	M	M	M	M	D	C	C	D	D	M	E	E
24	E	E	E	D	D	D	D	D	D	E	M	M
25	M	M	M	M	E	D	C	C	E	M	M	M
26	M	M	M	M	M	D	C	C	E	E	M	M
27	M	M	M	M	M	M	D	D	D	M	M	M
28	M	M	M	M	D	C	C	C	D	E	M	M
29	M	D	M	D	D	D	D	D	M	M	E	E
30	M	M	M	M	D	C	C	C	M	M	M	M
31	M	M	M	M	D	B	B	C	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.9 % C=16.7 % D=21.5 % E=10.2 % F= 0.0 %

L= 0.0 % M=49.7 %

NOTE: L=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM AWS STATION AT BUTTE
WIND DATA USED FROM AWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF NOVEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	5	0	0	1	0	0	0	0	0	0	6
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											12
TOTAL	17	0	0	1	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	5	0	1	0	0	0	0	0	0	0	6
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											11
TOTAL	18	0	1	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	17	0	1	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	7	0	0	0	1	0	0	0	0	0	8
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											12
TOTAL	17	0	0	0	1	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	27	0	1	1	1	0	0	0	0	0	30
301-500	39	0	0	0	0	0	0	0	0	0	39
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											47
TOTAL	69	0	2	1	1	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF NOVEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											120
TOTAL	0	0	0	0	0	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF NOVEMBER 1976

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	D	C	C	E	M	M
2	M	M	M	M	M	M	D	C	E	M	M	M
3	M	M	M	M	D	C	C	C	C	E	E	E
4	E	E	D	C	D	D	D	C	C	E	E	E
5	E	E	E	E	M	C	C	M	C	M	M	M
6	M	M	M	M	D	C	C	B	M	M	M	M
7	M	M	M	M	M	D	C	C	D	E	E	E
8	E	E	E	E	D	D	D	D	E	M	E	D
9	E	D	D	D	D	D	D	D	D	D	D	D
10	D	D	D	D	D	D	D	C	C	D	D	D
11	D	D	D	D	M	D	D	C	E	E	E	D
12	M	D	M	M	M	M	D	E	D	D	D	D
13	D	D	D	D	D	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	E	M	M
15	M	M	M	M	M	M	M	E	E	M	M	M
16	M	M	M	M	M	M	D	D	D	M	M	M
17	M	M	M	M	E	D	D	D	D	D	D	D
18	D	M	M	M	D	D	D	D	D	D	D	D
19	D	D	D	D	D	D	D	D	D	D	D	D
20	D	E	D	D	D	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	D	D	D	D	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	D	M	E	E	M	M	M
26	D	D	E	E	D	D	D	D	D	D	D	M
27	M	M	M	M	M	M	M	M	M	M	D	D
28	D	D	D	E	D	D	D	D	D	D	D	M
29	M	M	M	M	M	M	M	M	M	M	M	D
30	M	M	D	D	D	D	D	D	D	M	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.3 % C= 2.5 % D=37.8 % E=10.6 % F= 0.0 %

L= 0.0 % M=48.9 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF DECEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	20	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	19	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	19	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	21	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	42	0	0	0	0	0	0	0	0	0	42
301-500	37	0	0	0	0	0	0	0	0	0	37
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											45
TOTAL	79	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF DECEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	1	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	1	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											122
TOTAL	0	0	1	1	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - BUTTE MONTH OF DECEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

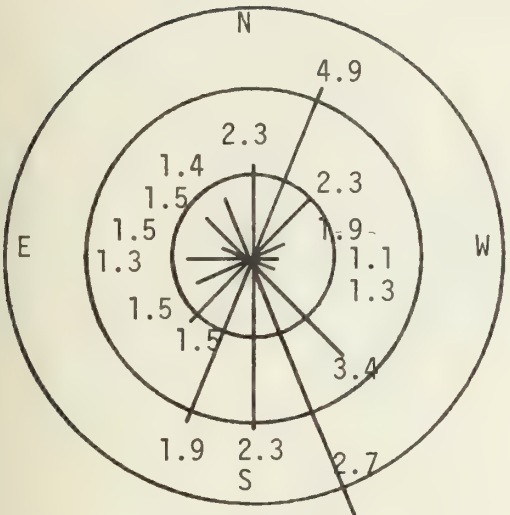
DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	D	D	D	D	D	M	D	D	D	M
2	M	M	M	M	D	M	M	M	M	D	M	M
3	M	M	D	D	D	D	E	E	E	E	M	D
4	D	D	D	D	D	D	D	D	D	D	D	D
5	D	D	D	D	D	M	E	E	E	M	M	M
6	M	M	M	M	M	D	D	D	E	M	M	M
7	E	M	M	D	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	D	D	E	D
9	D	D	M	D	E	E	E	D	M	D	E	E
10	M	E	E	M	M	M	M	M	M	M	M	M
11	M	M	D	E	M	M	D	D	D	M	D	D
12	M	M	M	M	D	E	E	E	E	M	M	M
13	M	M	M	M	E	E	M	E	E	M	M	M
14	E	E	D	D	D	D	D	D	D	D	D	D
15	D	D	D	D	D	D	D	D	D	M	M	M
16	E	E	E	M	M	M	M	E	E	M	M	M
17	M	M	M	M	M	M	D	D	E	M	E	E
18	E	M	M	D	D	M	M	M	M	D	D	D
19	M	M	M	M	M	D	E	M	M	M	E	E
20	M	M	M	D	D	D	M	M	M	M	M	M
21	M	E	D	D	D	D	D	D	D	D	D	D
22	D	D	D	D	D	D	D	D	D	D	D	D
23	E	D	M	M	M	D	D	D	D	D	D	D
24	D	D	D	D	D	D	D	D	D	D	E	E
25	E	M	M	E	E	E	E	E	E	E	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	E	M	M	M	M	M	D	D	D
28	D	D	M	M	E	E	E	E	E	M	M	M
29	E	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

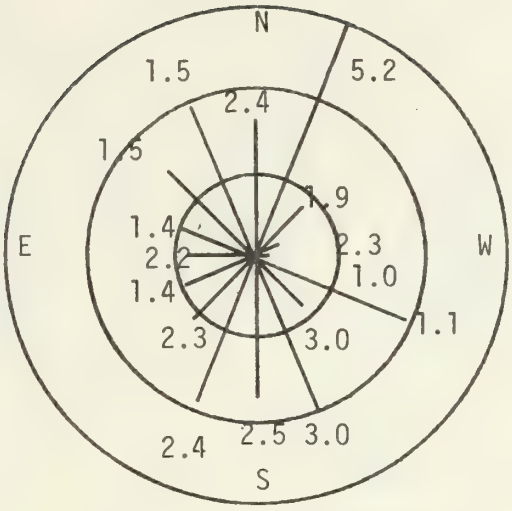
A= 0.0 % B= 0.0 % C= 0.0 % D=33.9 % E=15.9 % F= C.C %

U= C.C % M=50.3 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT BUTTE
WIND DATA USED FROM NWS STATION AT BUTTE

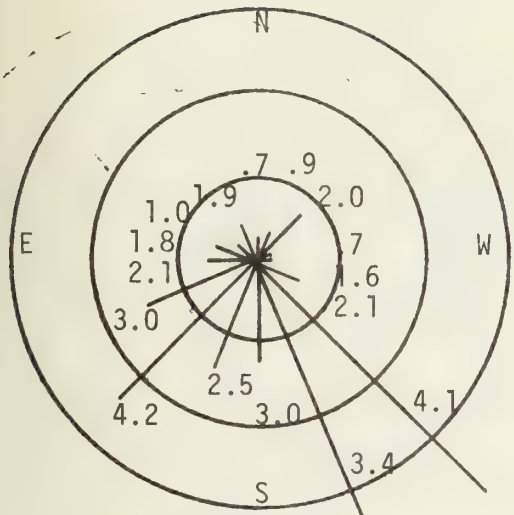


February 1978
Calm 4%
(Total Hours 596)

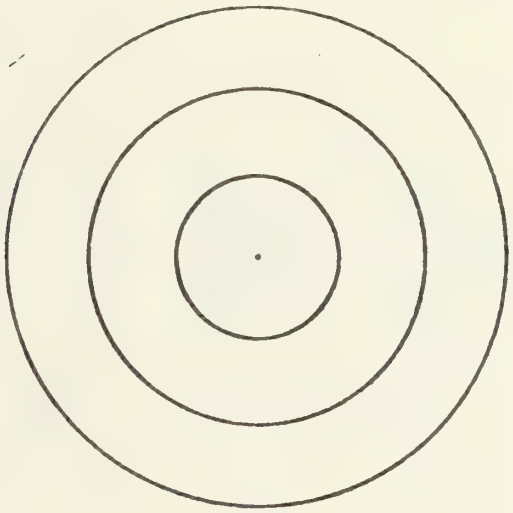


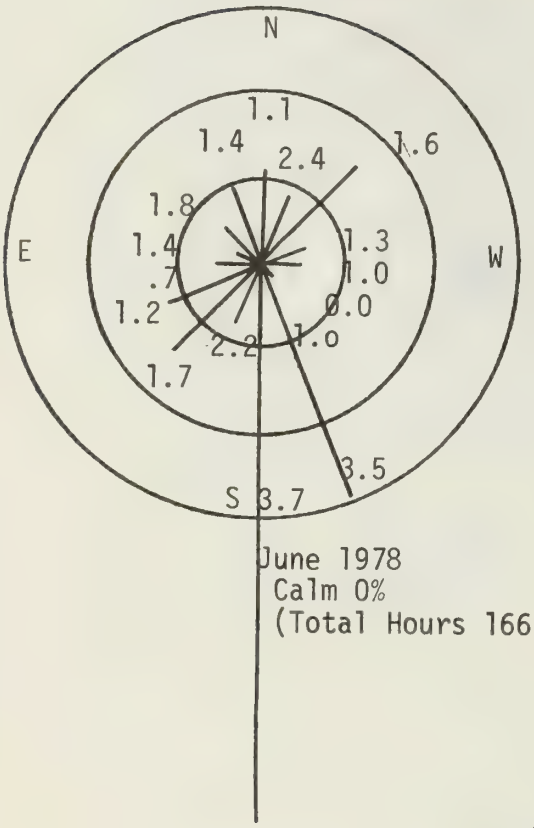
March 1978
Calm 0%
(total Hours 732)

Figure
Monthly Wind Roses
GLACIER PARK INTERNATIONAL AIRPORT
Kalispell, Montana

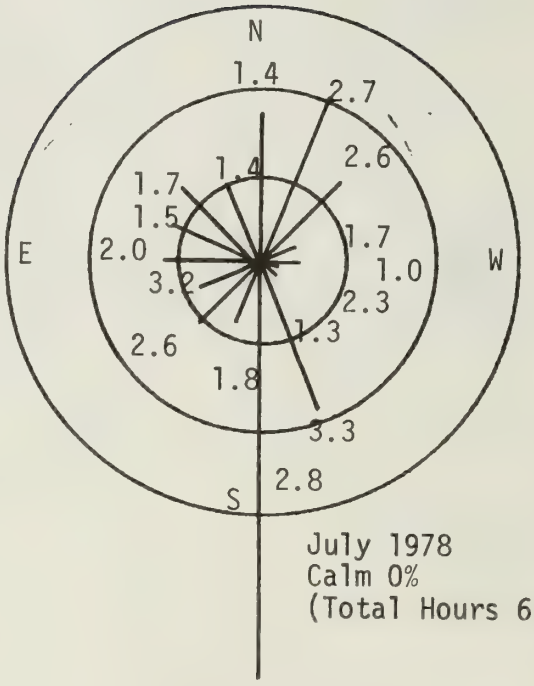


April, 1978
Calm 3%
(Total Hours 234)



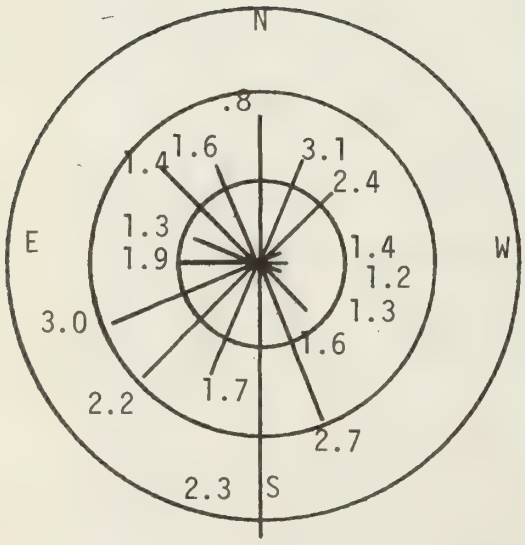


June 1978
Calm 0%
(Total Hours 166)

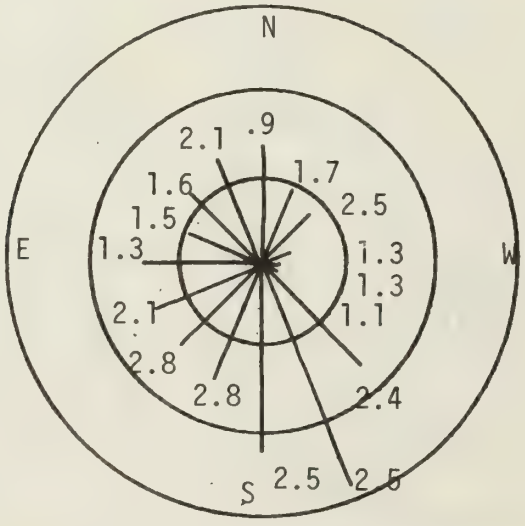


July 1978
Calm 0%
(Total Hours 679)

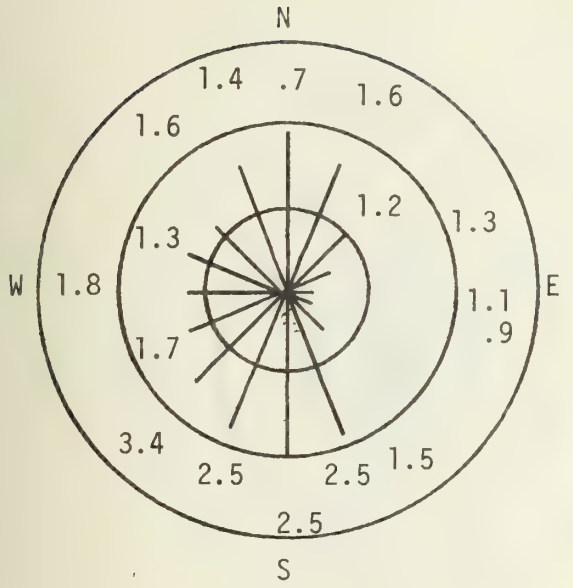
Figure
Monthly Wind Roses
GLACIER PARK INTERNATIONAL AIRPORT
Kalispell, Montana



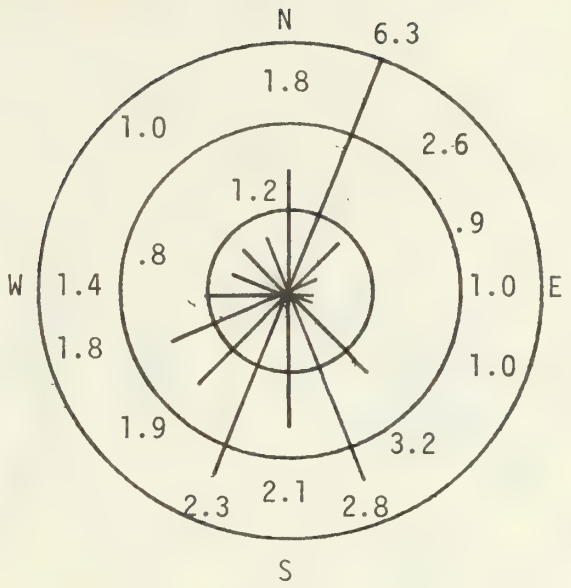
August 1978
Calm 0%
(Total Hours 711)



September, 1978
Calm 0%
(Total Hours 705)

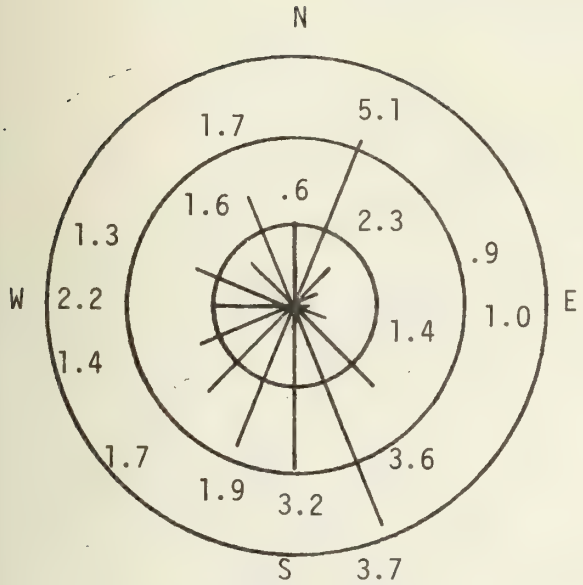


October 1978
Calm 0%
(Total Hours 726)

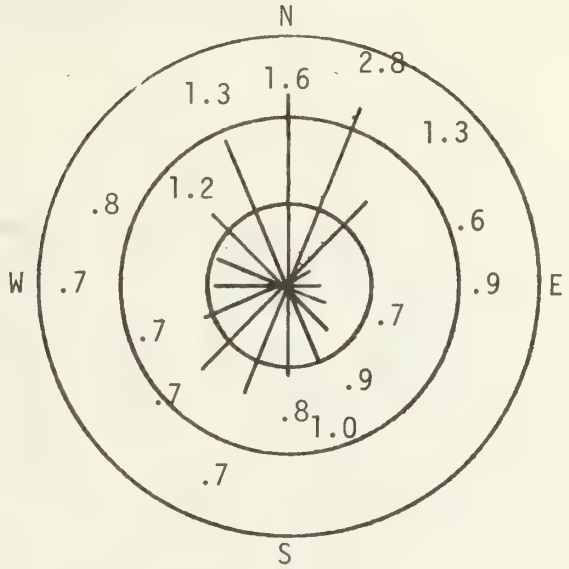


November 1978
Calm 0%
(Total Hours 708)

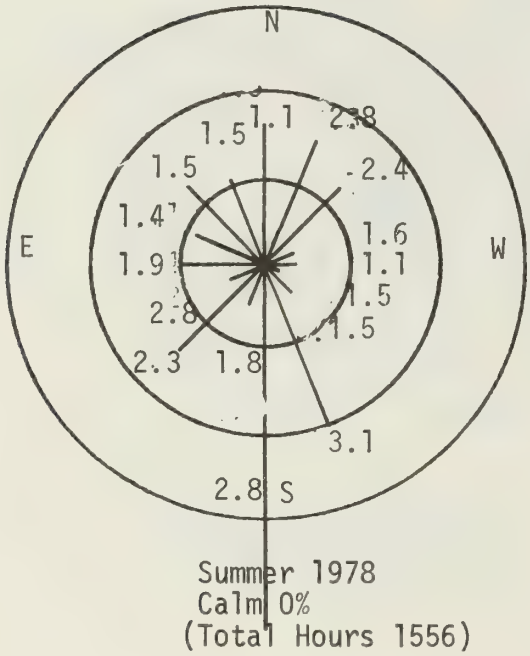
Figure
Monthly Wind Roses
Glacier Park International Airport
Kalispell, Montana



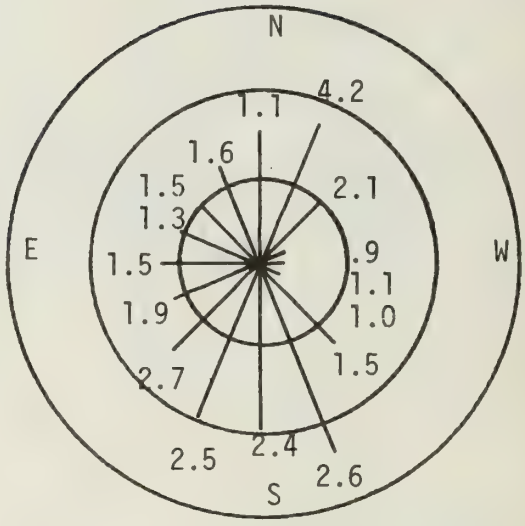
December 1978
Calm 0%
(Total Hours 732)



January 1978
Calm 1%
(Total Hours 694)

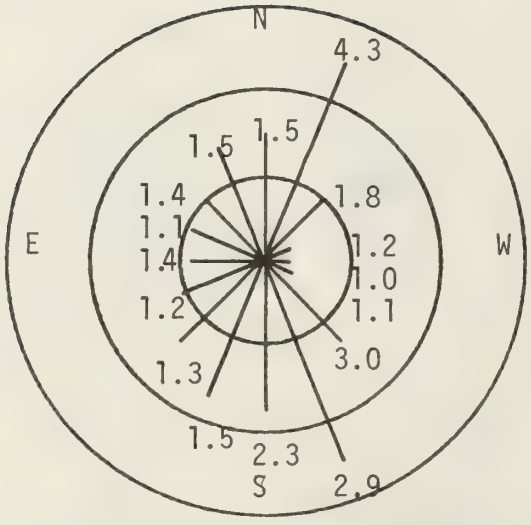


Summer 1978
Calm 0%
(Total Hours 1556)

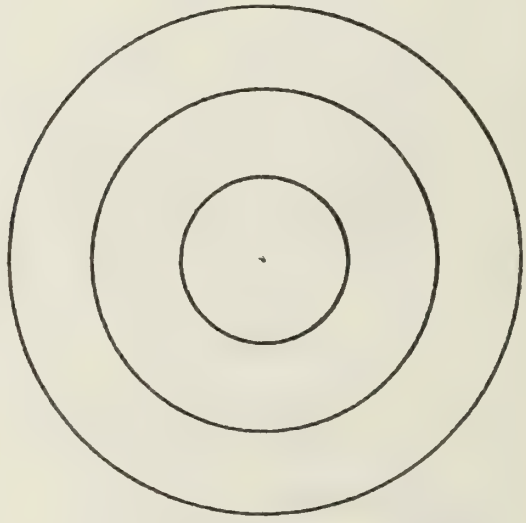


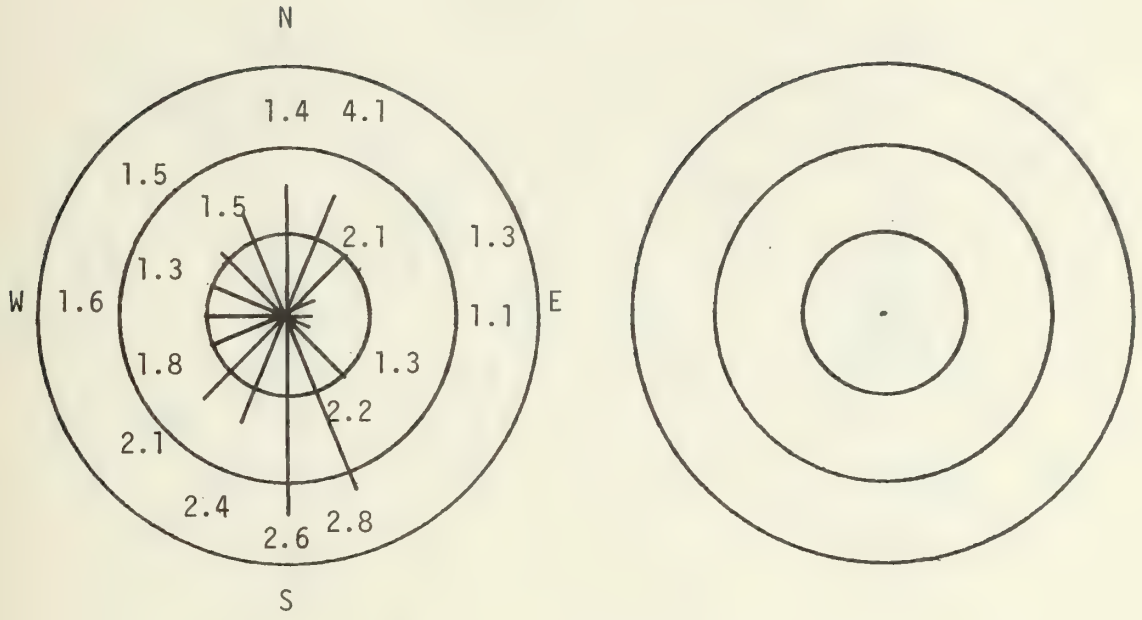
Autumn 1978
Calm 0%
(Total Hours 2139)

Figure
Seasonal Wind Roses
GLACIER PARK INTERNATIONAL AIRPORT
Kalispell, Montana



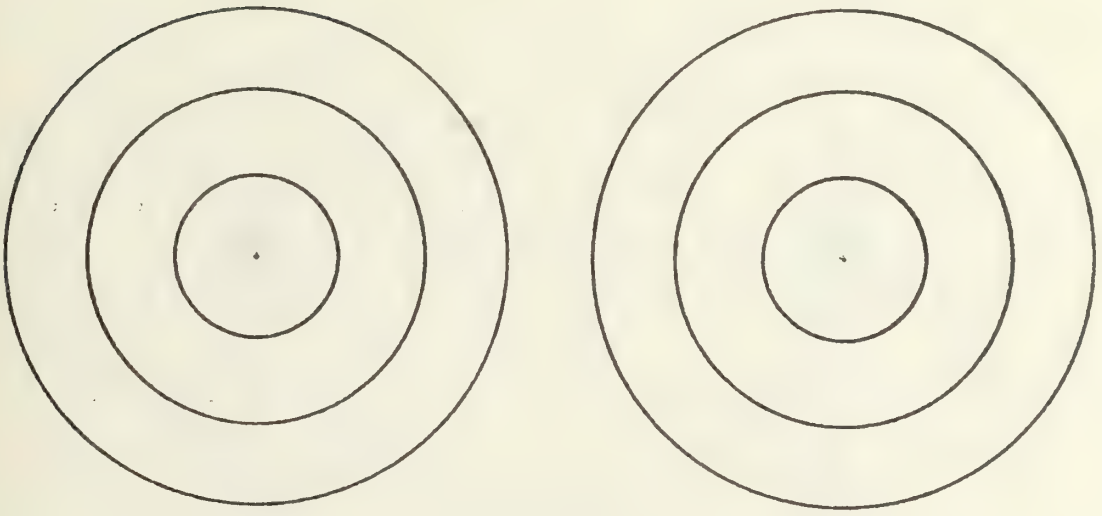
Winter 1978-1979
Calm 1%
(Total Hours 2022)

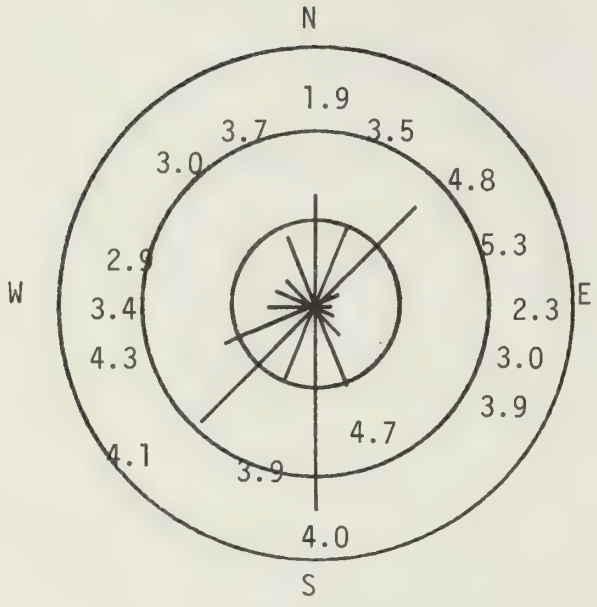




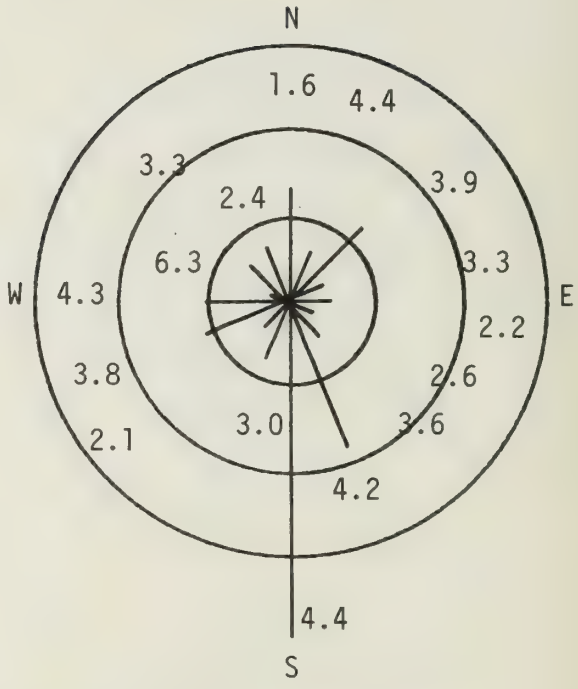
Annual 1978-1979
(June 1978 thru March 1979)
Calm 0%
(Total Hours 6449)

Figure
Annual Wind Rose
Glacier Park International Airport
Kalispell, Montana



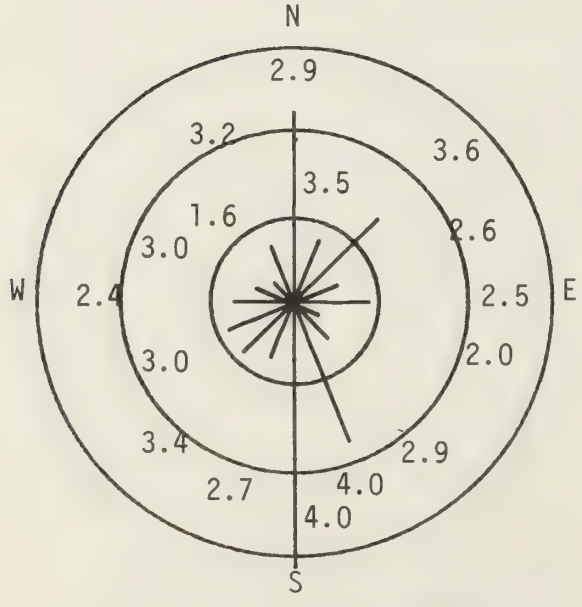


May 1978
Calm 16%
(Total Hours 248)

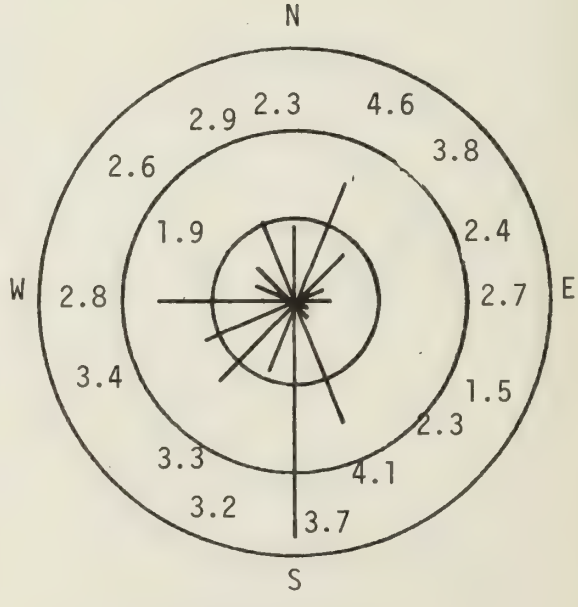


June 1978
Calm 21%
(Total Hours 240)

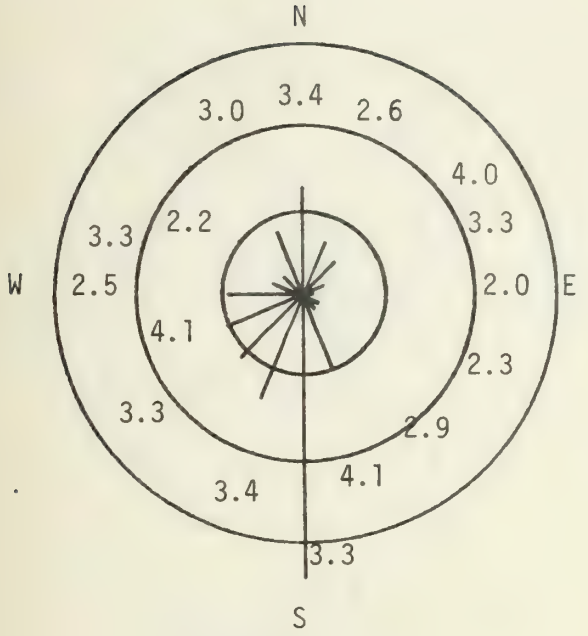
Figure
Monthly Wind Roses
National Weather Service
Glacier Park International Airport
Kalispell, Montana



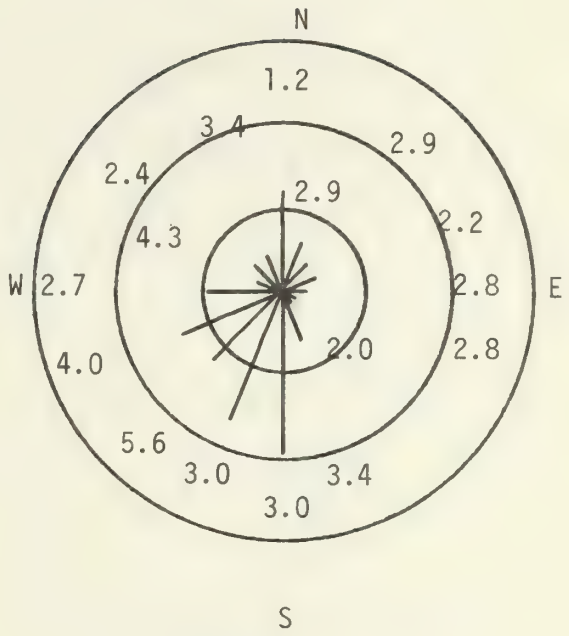
July 1978
Calm 18%
(Total Hours 248)



August 1978
Calm 21%
(Total Hours 248)

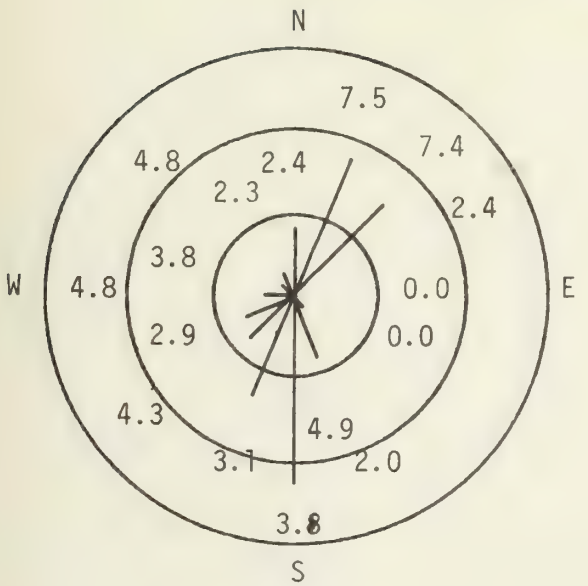


September 1978
Calm 31%
(Total Hours 240)

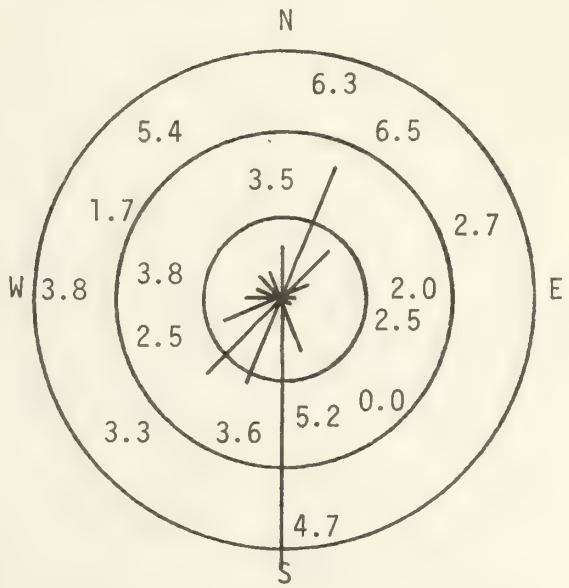


October 1978
Calm 43%
(Total Hours 248)

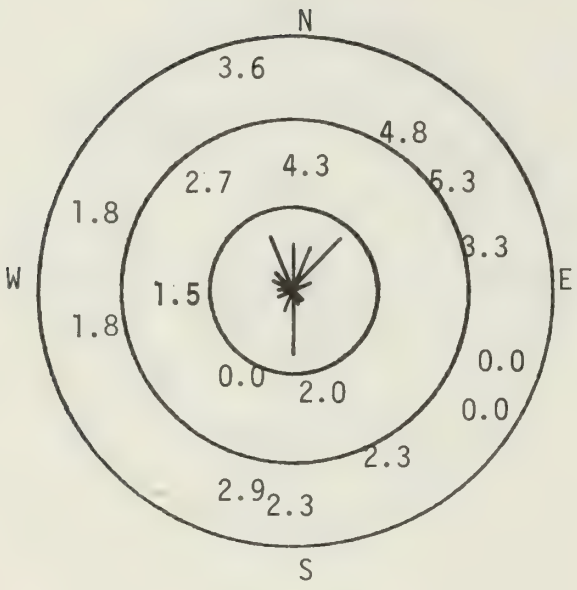
Figure
Monthly Wind Roses
National Weather Service
Glacier Park International Airport
Kalispell, Montana



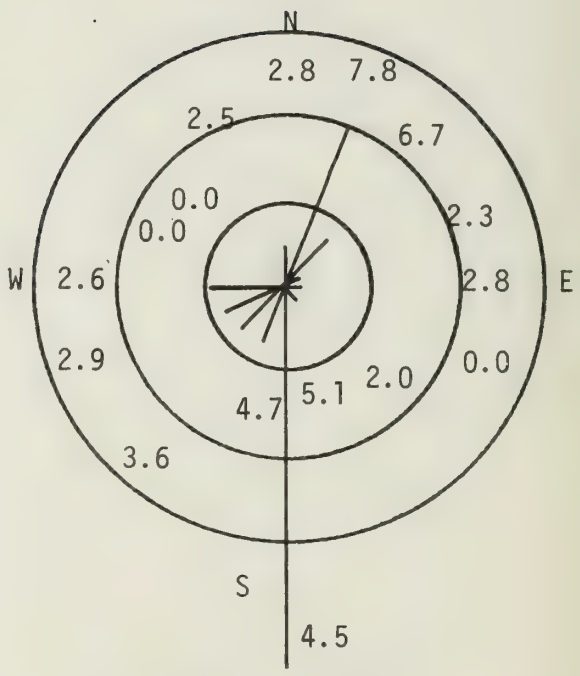
November 1978
Calm 43%
(Total Hours 240)



December 1978
Calm 38%
(Total Hours 248)

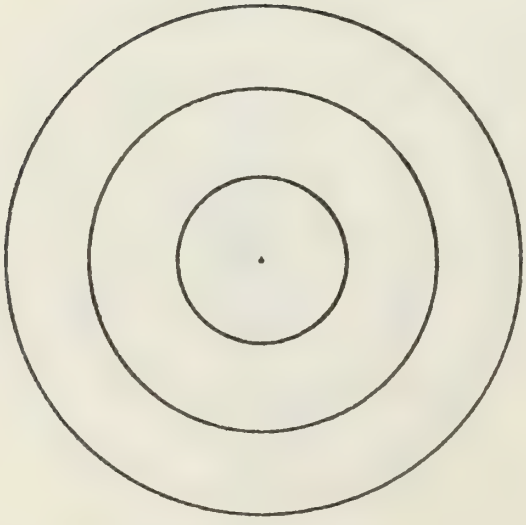


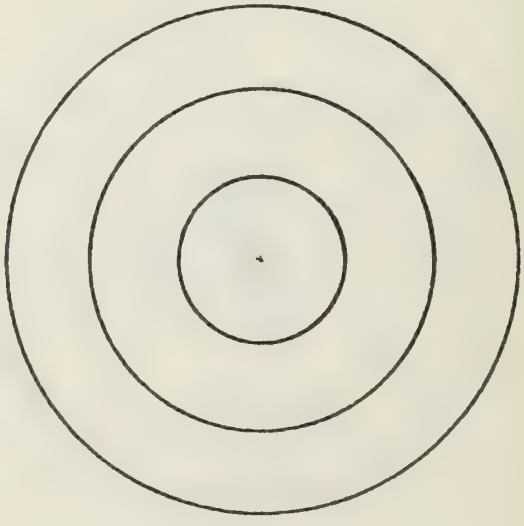
January 1979
Calm 76%
(Total Hours 248)

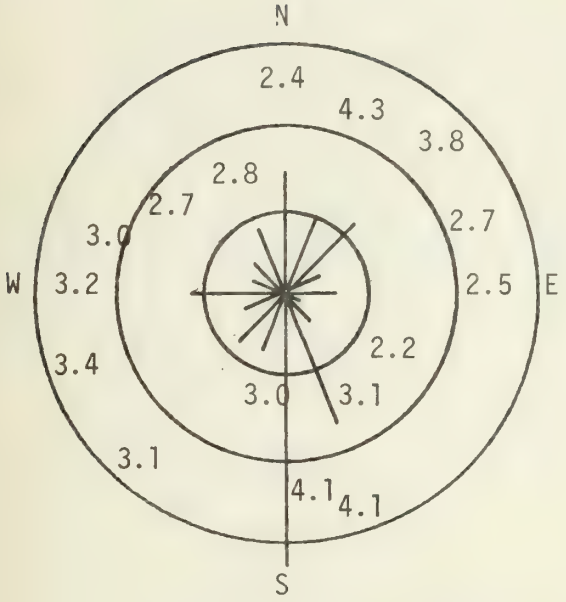


February 1979
Calm 34%
(Total Hours 224)

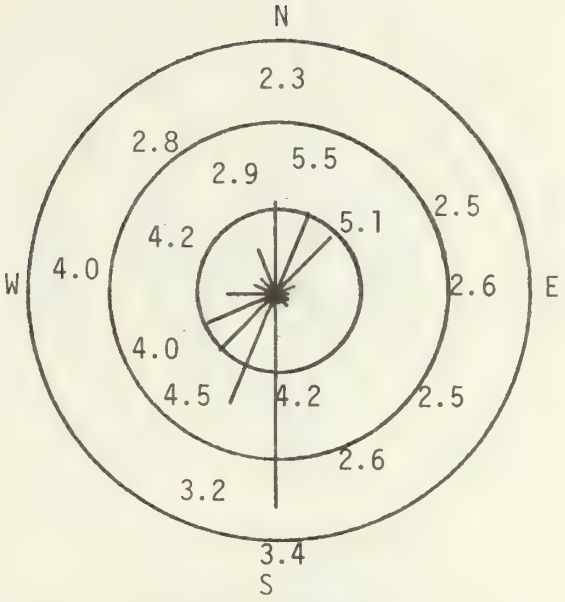
Figure
Monthly Wind Roses
National Weather Service
Glacier Park International Airport
Kalispell, Montana





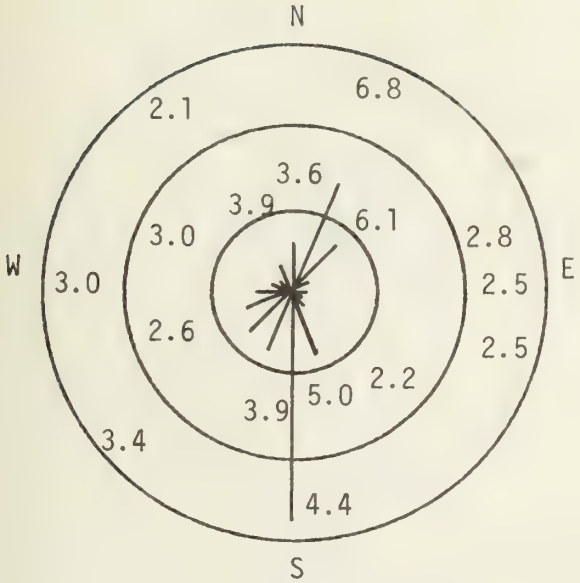


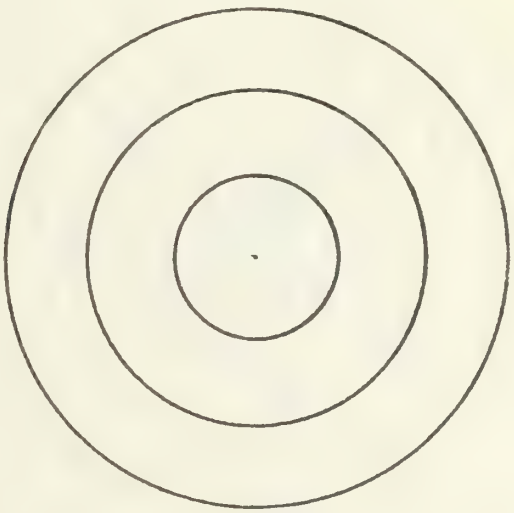
Summer 1978
Calm 20%
(Total Hours 736)



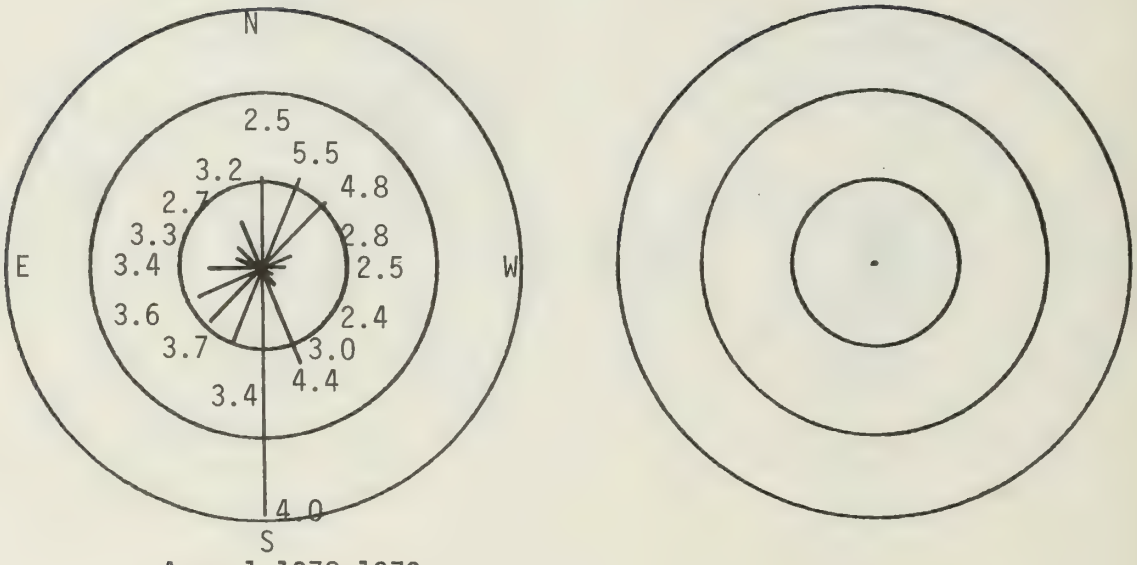
Autumn 1978
Calm 39%
(Total Hours 728)

Figure
Seasonal Wind Roses
National Weather Service
Glacier Park International Airport
Kalispell, Montana



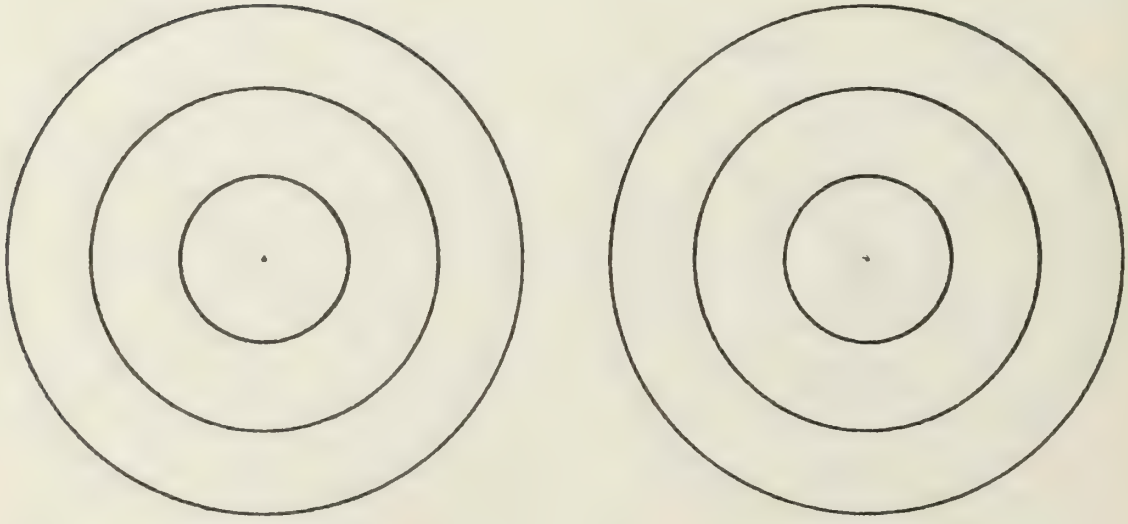


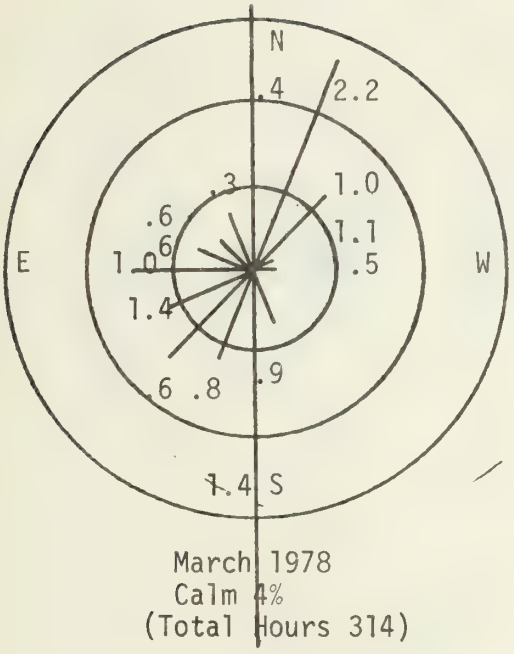
Winter 1978-1979
Calm 50%
(Total Hours 720)



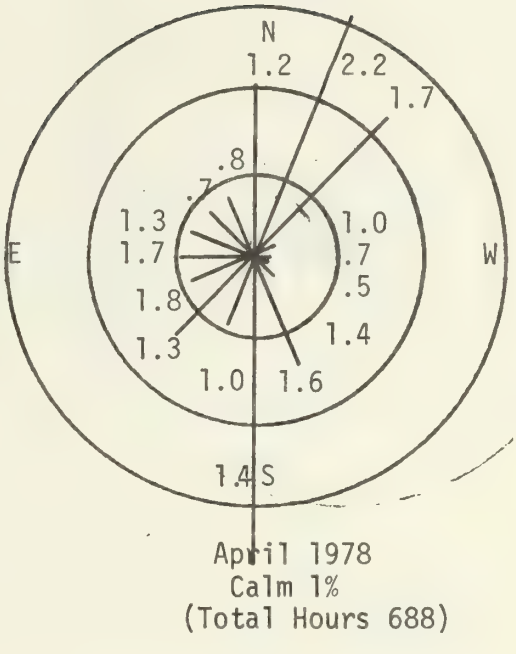
Annual 1978-1979
(May 1978 - February 1979)
Calm 37%
(Total Hours 2432)

Figure
Annual Wind Rose
National Weather Service
GLACIER PARK INTERNATIONAL AIRPORT
Kalispell, Montana



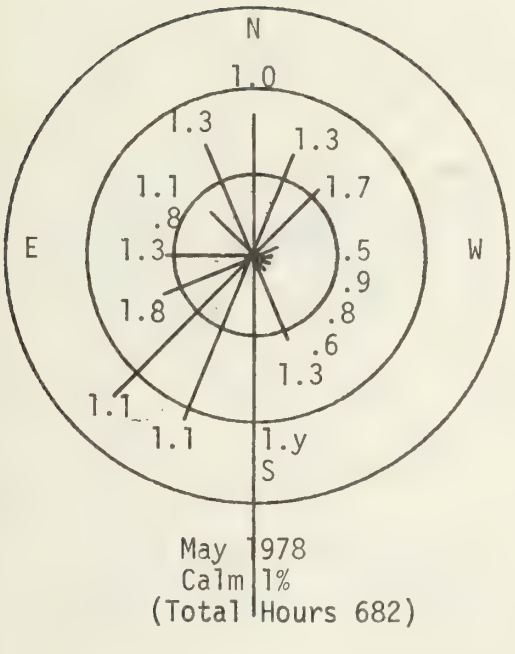


March 1978
Calm 4%
(Total Hours 314)

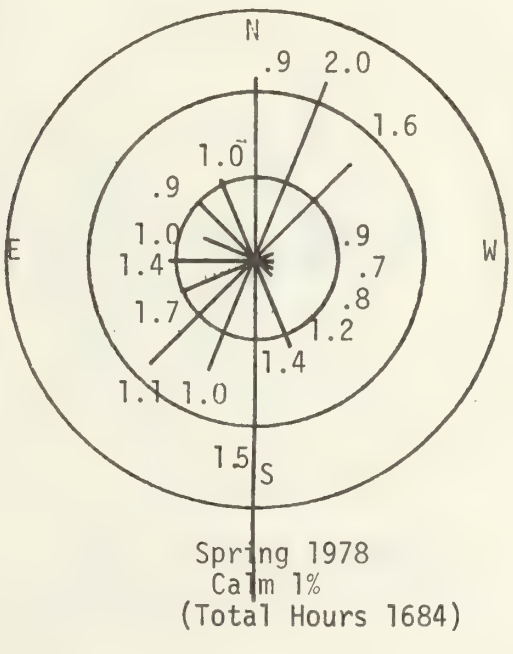


April 1978
Calm 1%
(Total Hours 688)

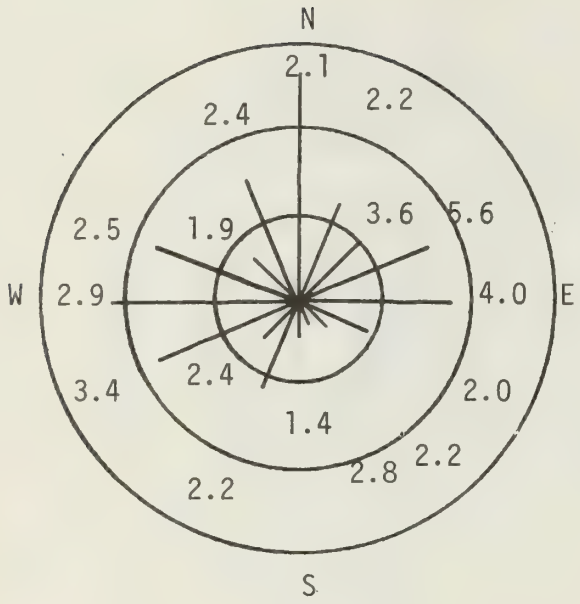
Figure
Monthly Wind Roses
BRANT SITE
Kalispell, Montana



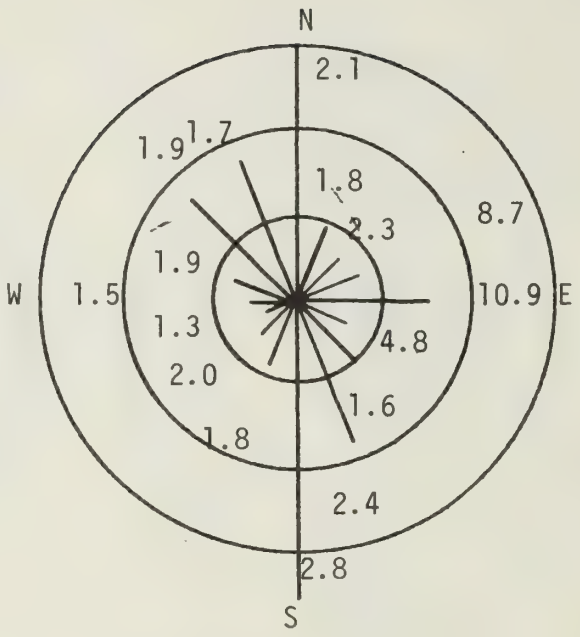
May 1978
Calm 1%
(Total Hours 682)



Spring 1978
Calm 1%
(Total Hours 1684)

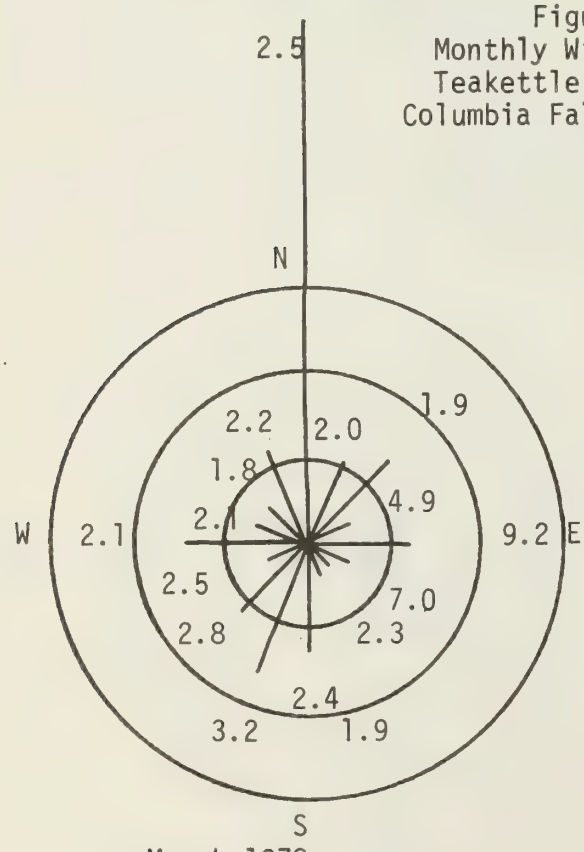


January 1978
Calm 0%
(Total Hours 714)

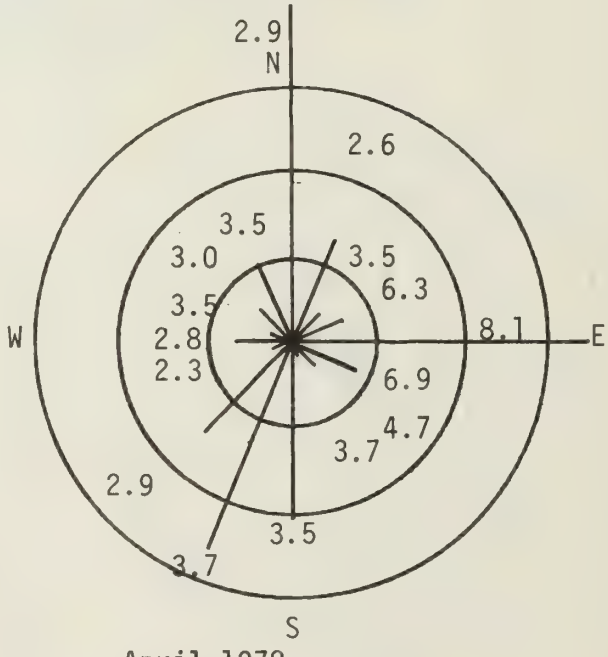


February 1978
Calm 0%
(Total Hours 656)

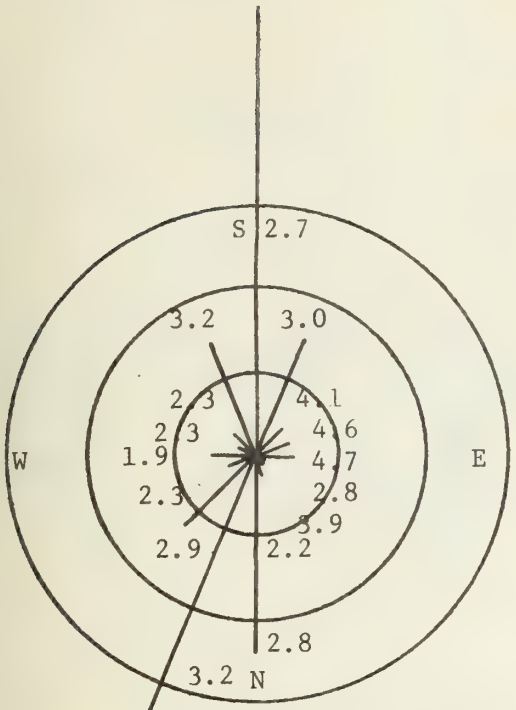
Figure
Monthly Wind Roses
Teakettle Mountain
Columbia Falls, Montana



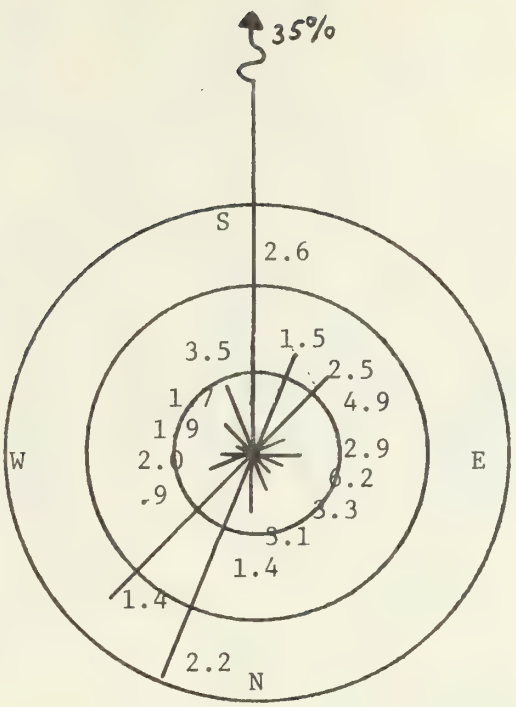
March 1978
Calm 0%
(Total Hours 728)



April 1978
Calm 0%
(Total Hours 693)

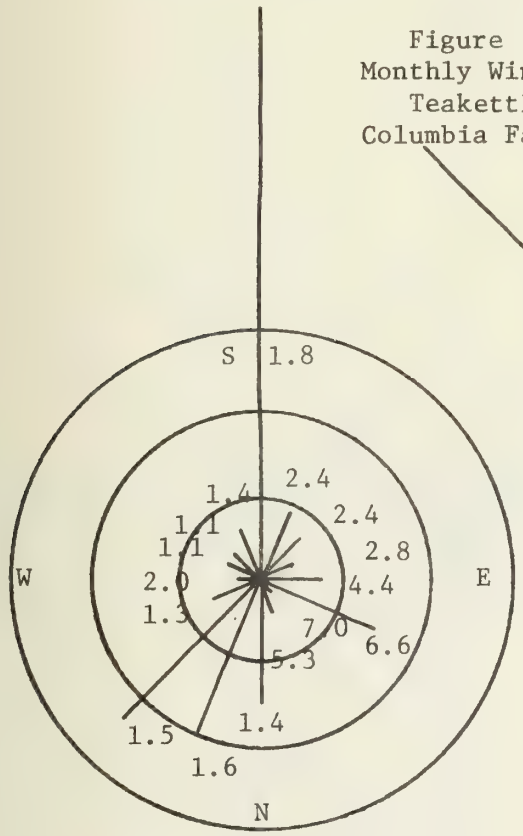


May 1978
Calm 0%
(Total Hours 675)

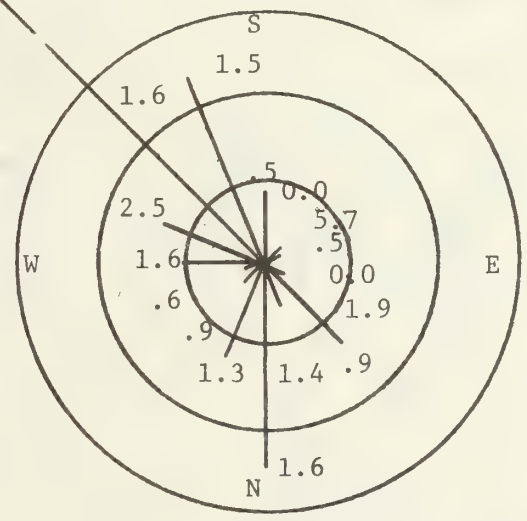


June 1978
Calm 6%
(Total Hours 308)

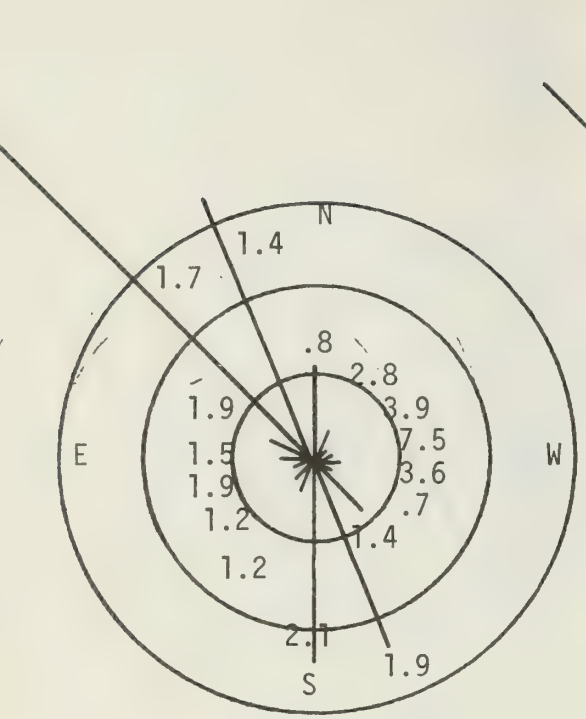
Figure
Monthly Wind Roses
Teakettle Mtn.
Columbia Falls, MT



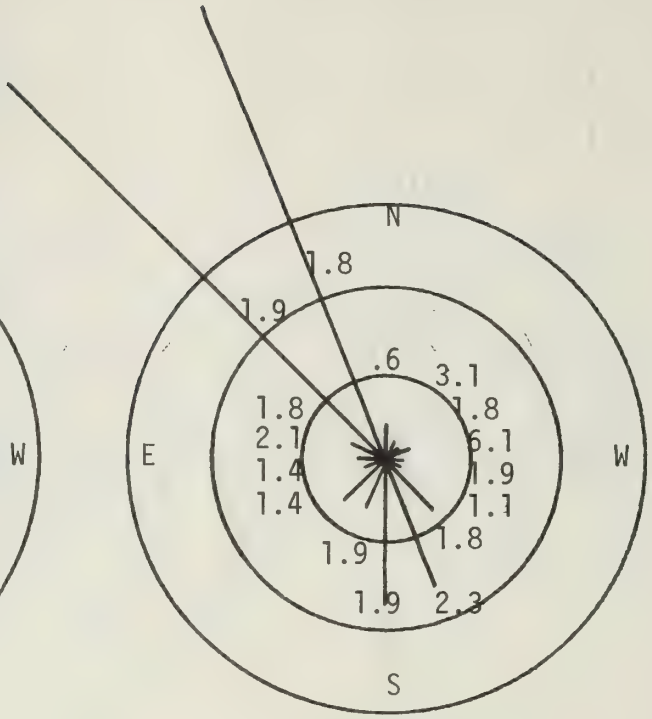
July 1978
Calm 0%
(Total Hours 186)



August 1978
Calm 0%
(Total Hours 187)

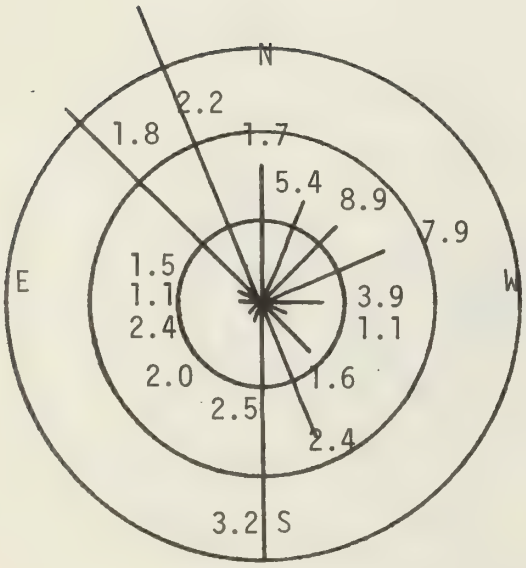


September, 1978
Calm 0%
(Total Hours 703)

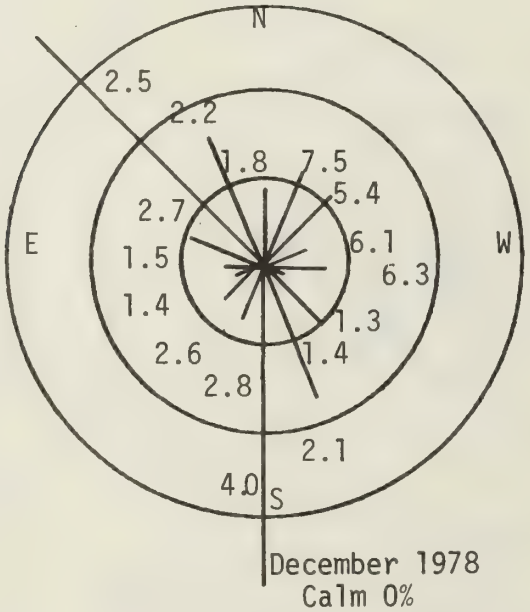


October, 1978
Calm 0%
(Total Hours 732)

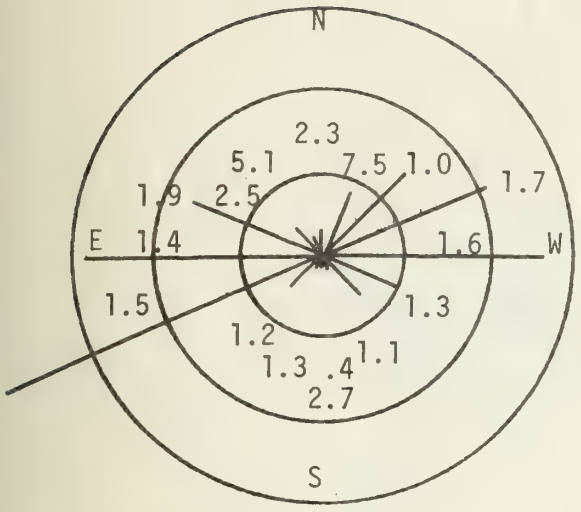
Figure
Monthly Wind Roses
Teakettle Mountain
Columbia Falls, Montana



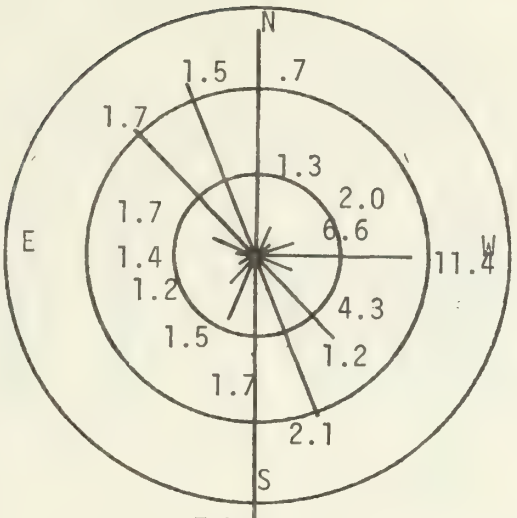
November, 1978
Calm 0%
(Total Hours 545)



December 1978
Calm 0%
(Total Hours 213)

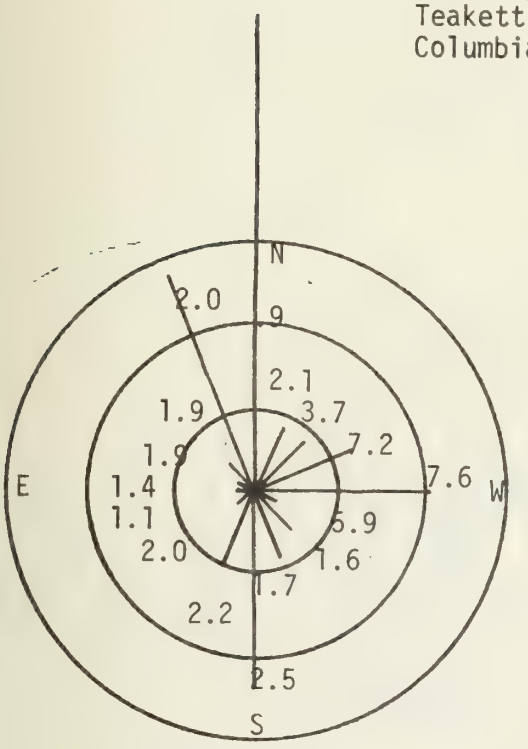


January 1979
Calm 0%
(Total Hours 564)

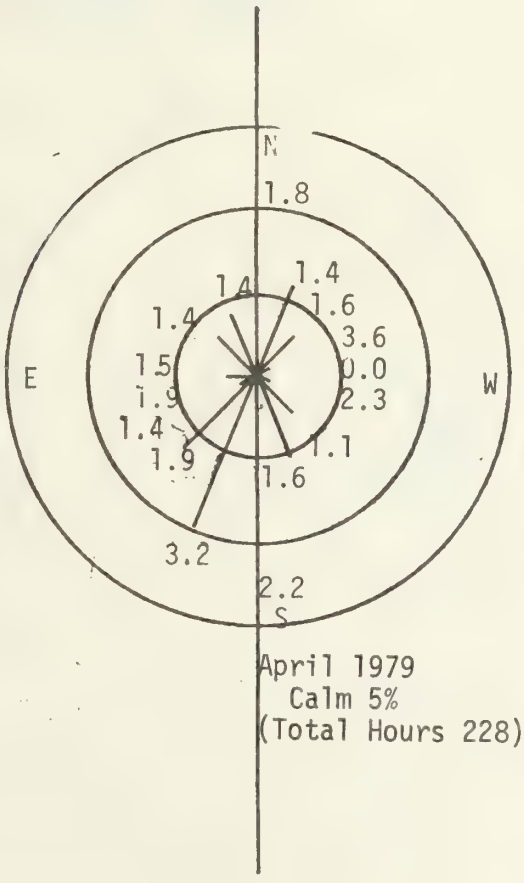


February 1979
Calm 0%
(Total Hours 657)

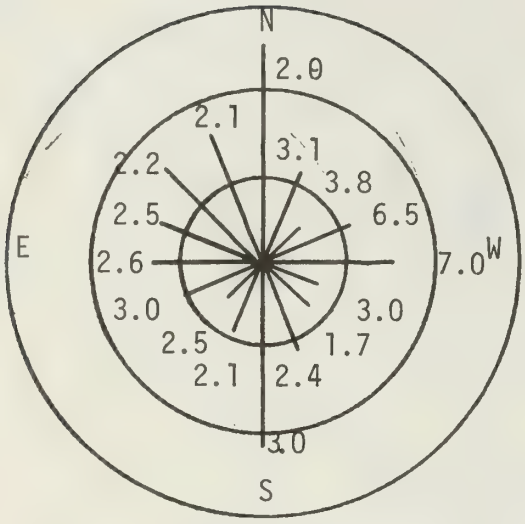
Figure
Monthly Wind Roses
Teakettle Mountain
Columbia Falls, Montana



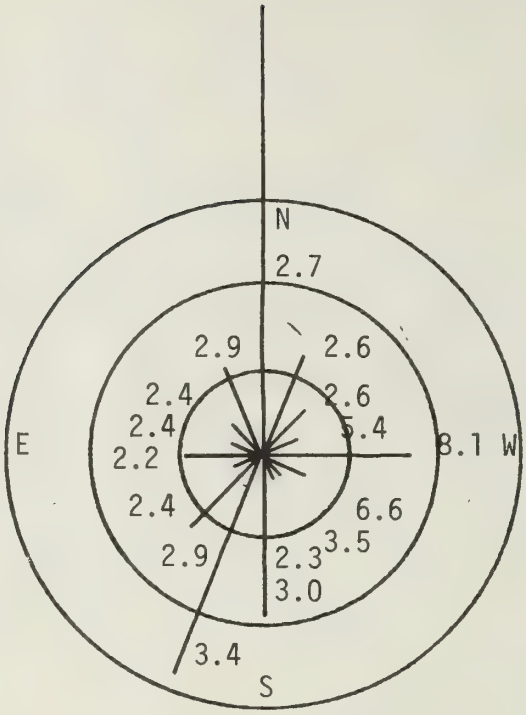
March 1979
Calm 0%
(Total Hours 731)



April 1979
Calm 5%
(Total Hours 228)

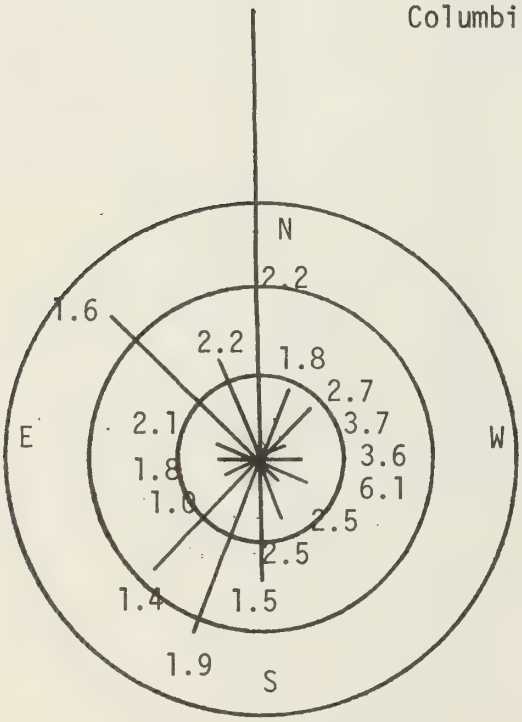


Winter 1978
Calm 0%
(Total Hours 1583)

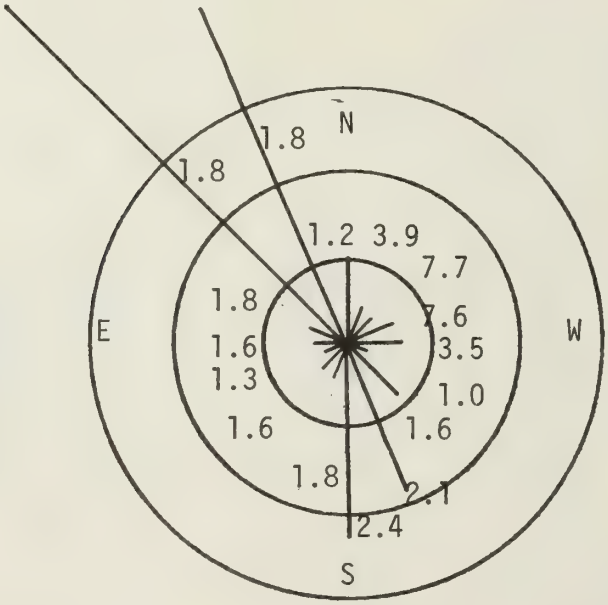


Spring 1978
Calm 0%
(Total Hours 2097)

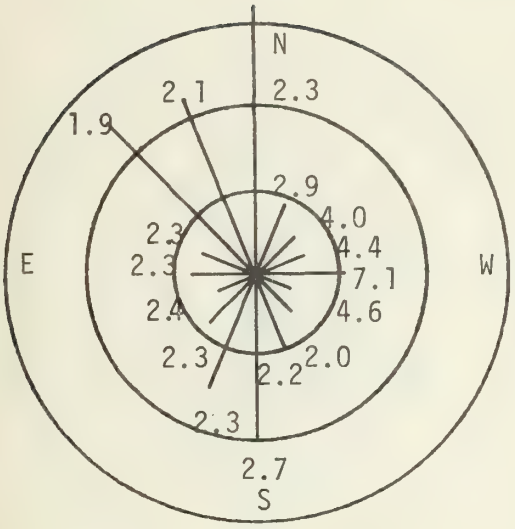
Figure
Seasonal Wind Roses
Teakettle Mountain
Columbia Falls, Montana



Summer 1978
Calm 3%
(Total Hours 681)

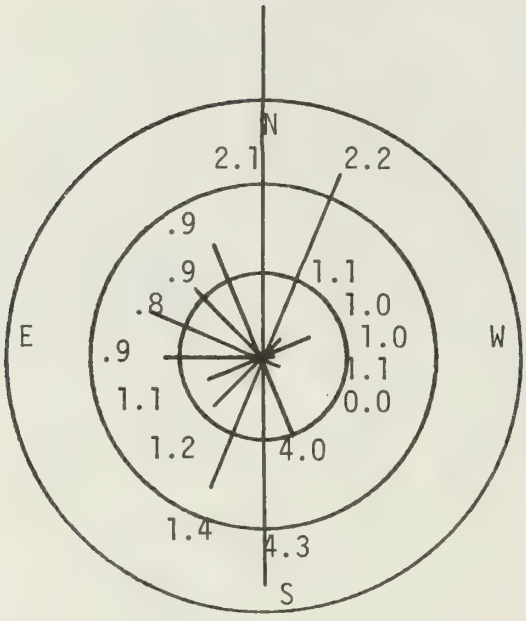


Autumn 1978
Calm 0%
(Total Hours 1980)

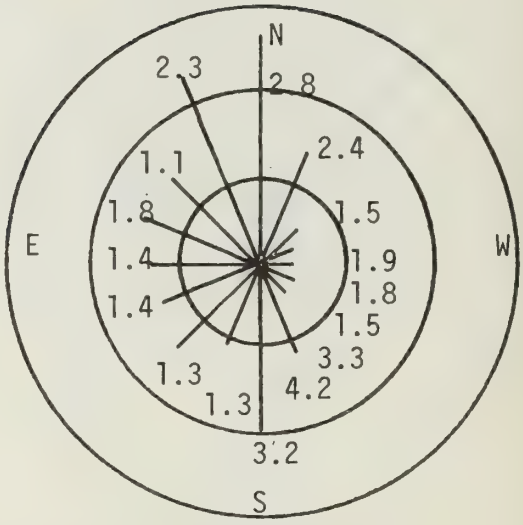


1978
Calm 0%
(Total Hours 6341)

Figure
Annual Wind Rose
Teakettle Mountain
Columbia Falls, Montana

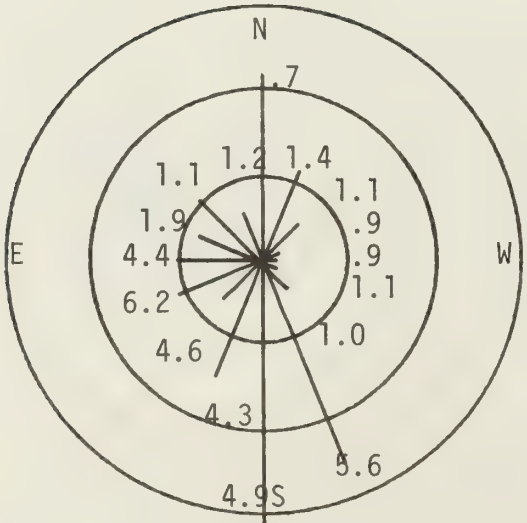


January 1978
Calm 0%
(Total Hours 301)

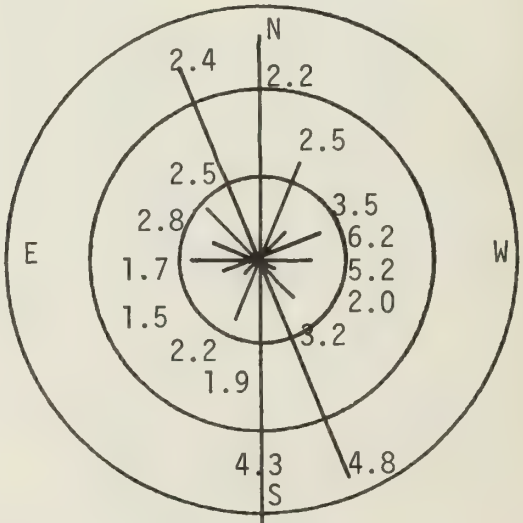


February 1978
Calm 0%
(Total Hours 574)

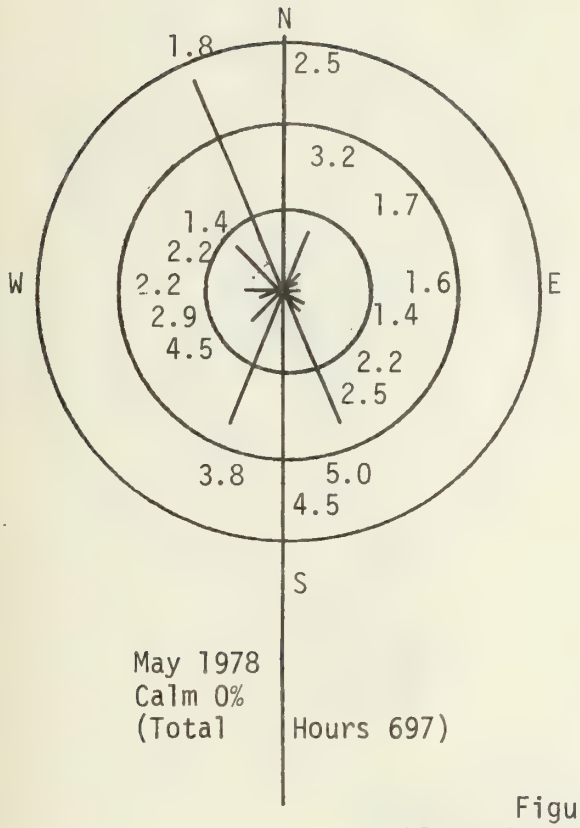
Figure
Monthly Wind Roses
GEIS Site
Columbia Falls, Montana



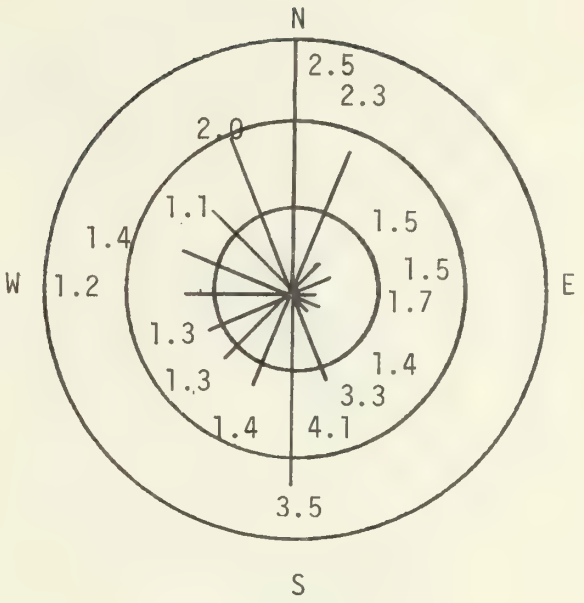
March 1978
Calm 0%
(Total Hours 220)



April 1978
Calm 0%
(Total Hours 312)

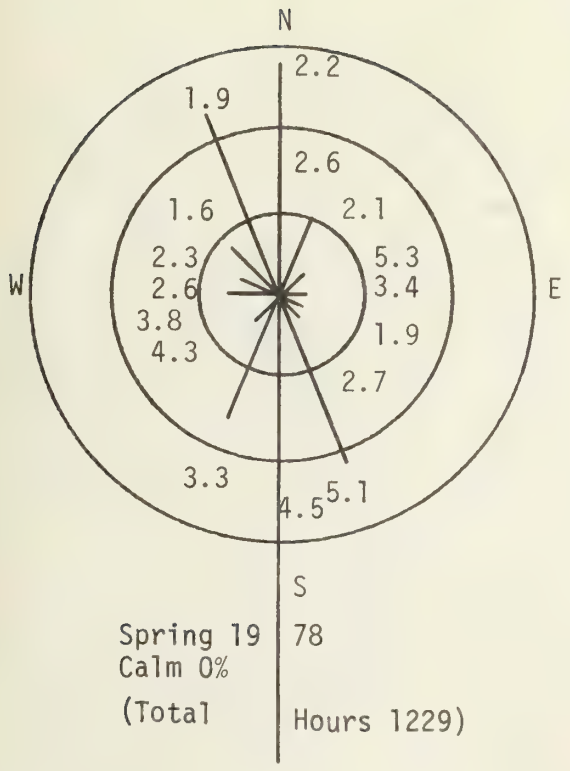


May 1978
Calm 0%
(Total Hours 697)

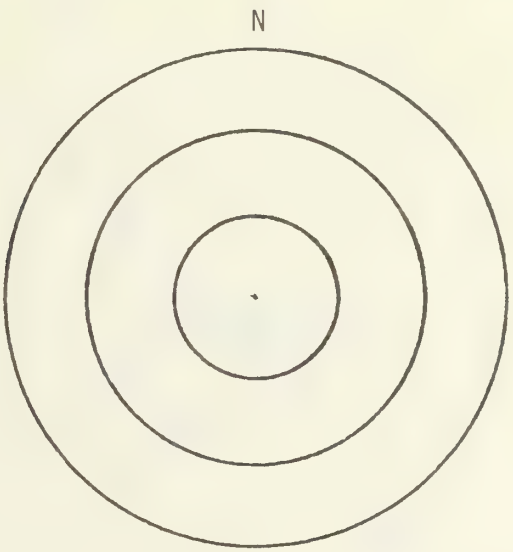


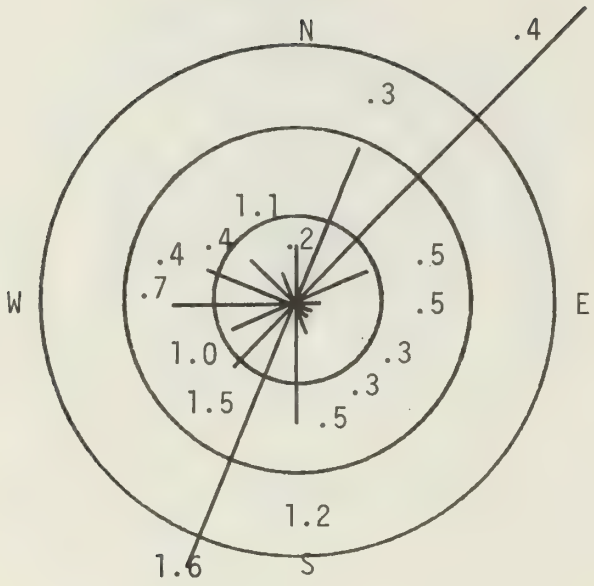
Winter 1978
(Jan. and Feb. 1978)
Calm 0%
(Total Hours 875)

Figure
Monthly and Seasonal Wind Roses
Geis Site
Columbia Falls, Montana

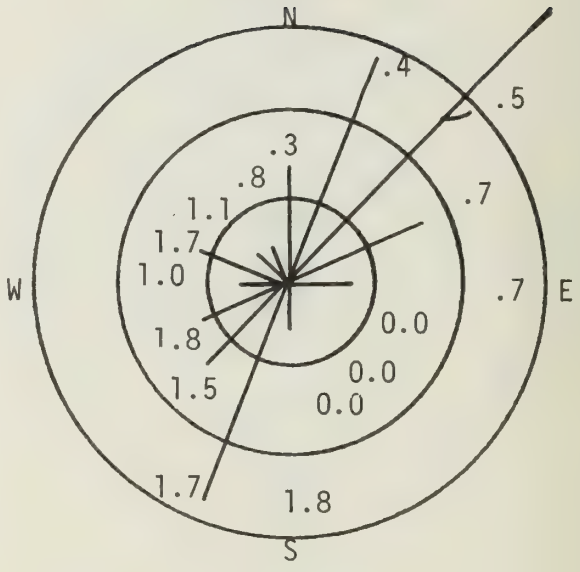


Spring 19 78
Calm 0%
(Total Hours 1229)



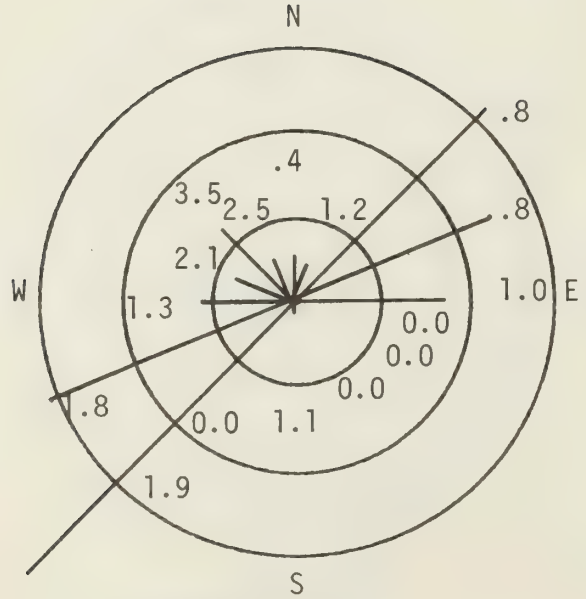


September 1978
Calm 0%
(Total Hours 233)

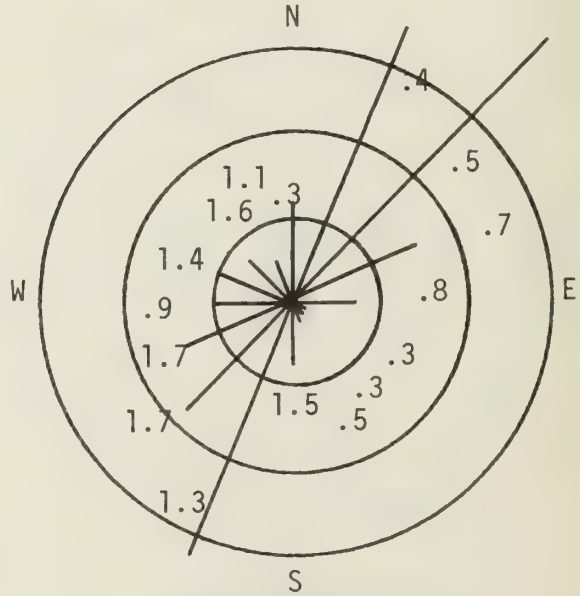


October 1978
Calm 3%
(Total Hours 498)

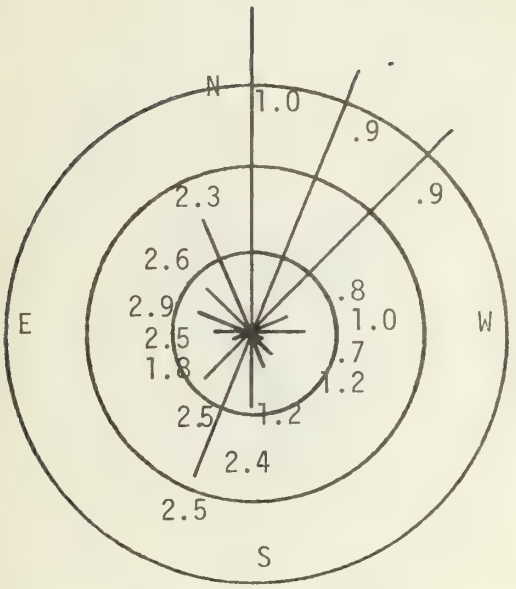
Figure
Monthly and Seasonal Wind Roses
Polebridge Ranger Station
Polebridge, Montana



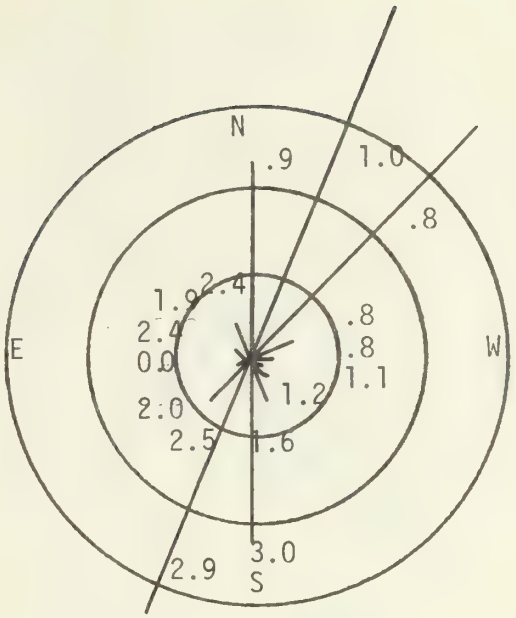
November 1978
Calm 0%
(Total Hours 144)



Autumn 1978
Calm 2%
(Total Hours 875)

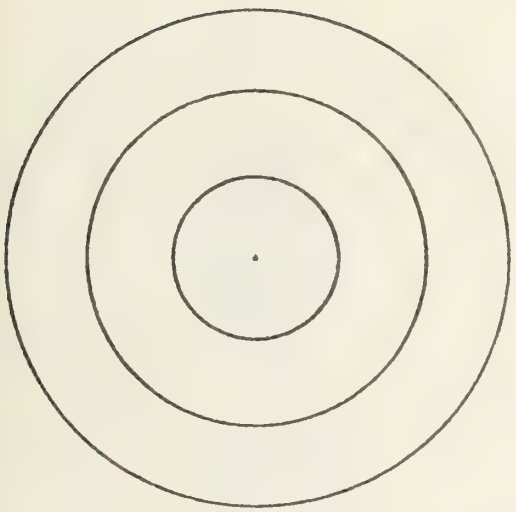


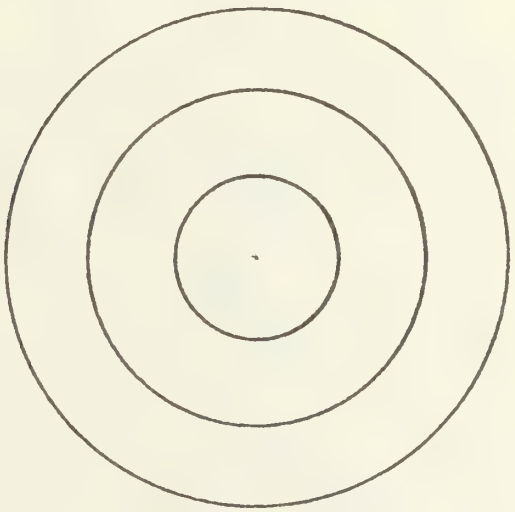
November 1978
Calm 0%
(Total Hours 482)



December 1978
Calm 0%
(Total Hours 228)

Figure
Monthly Wind Roses
Big Prairie Site
Polebridge, Montana





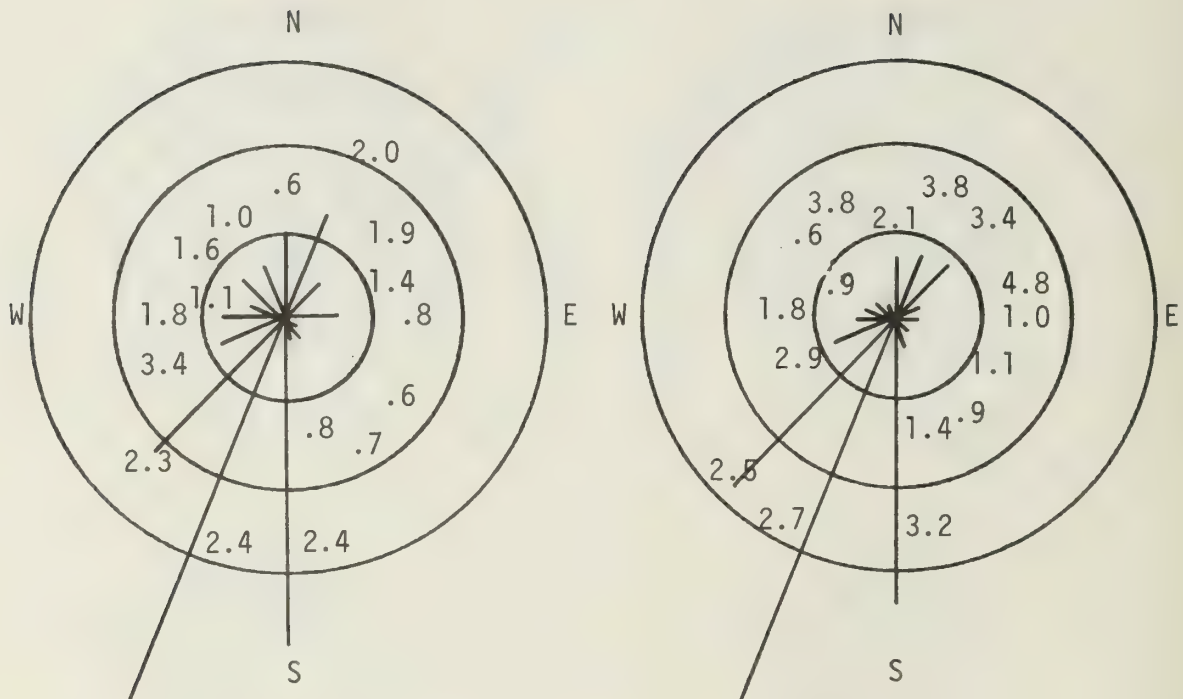
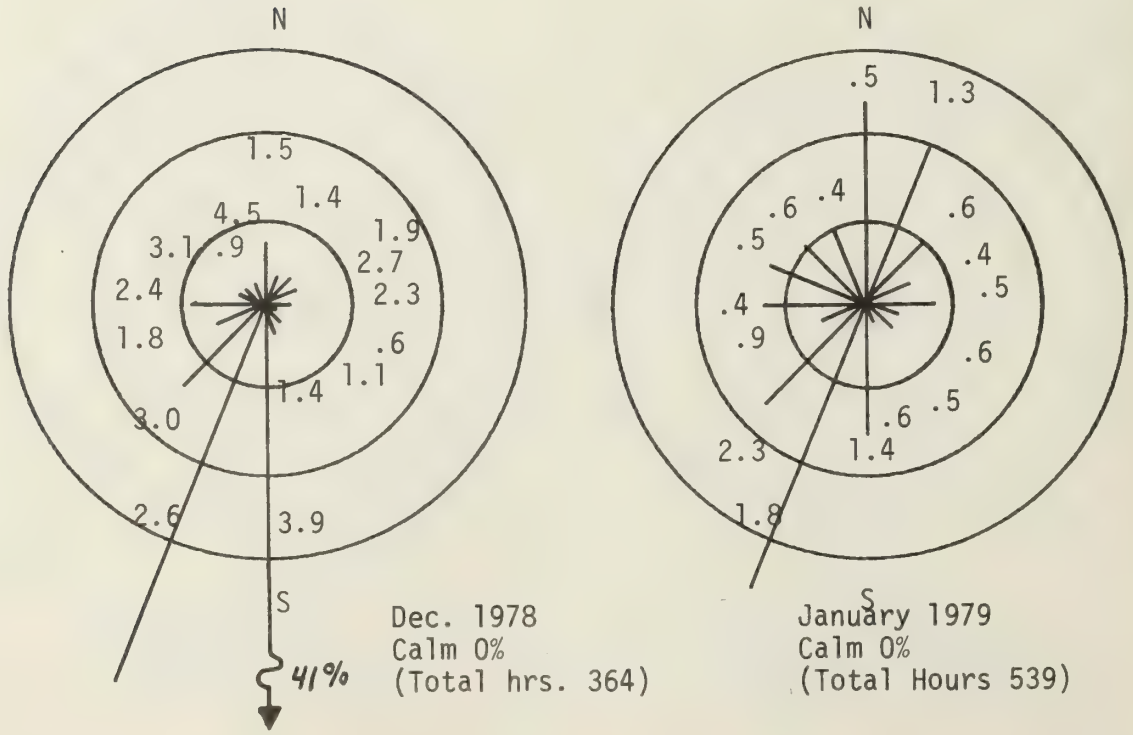
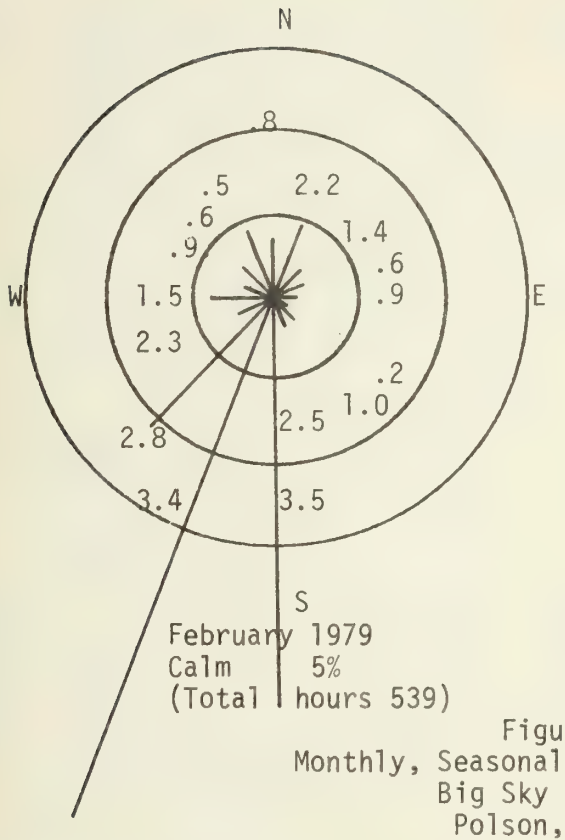
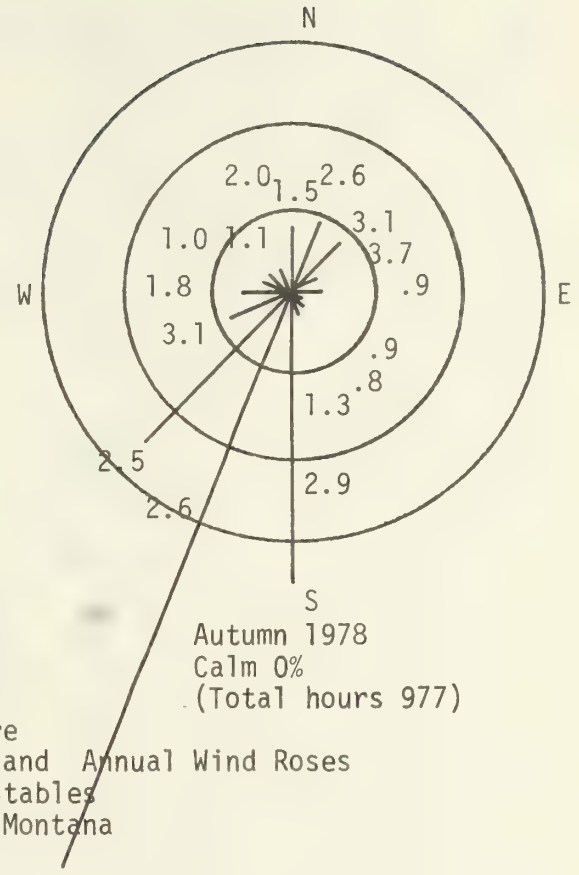


Figure
Monthly Wind Roses
Big Sky Stables
Polson, Montana



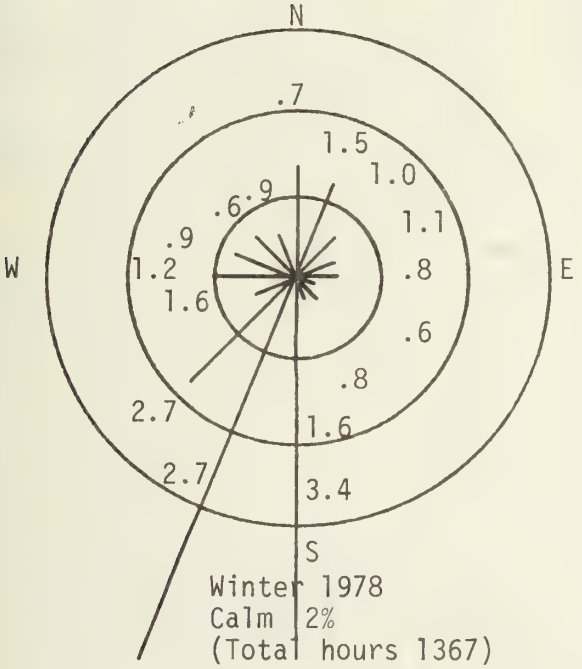


February 1979
Calm 5%
(Total hours 539)

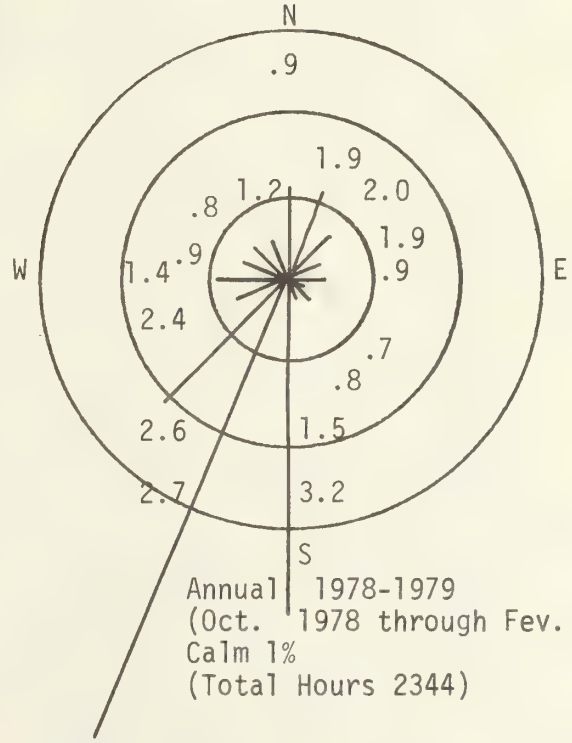


Autumn 1978
Calm 0%
(Total hours 977)

Figure
Monthly, Seasonal and Annual Wind Roses
Big Sky Stables
Polson, Montana



Winter 1978
Calm 2%
(Total hours 1367)



Annual 1978-1979
(Oct. 1978 through Fev. 1979)
Calm 1%
(Total Hours 2344)

KALISPELL - GLACIER INTERNATIONAL AIRPORT

1978-1979

MORNING MIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100													10	18	6		38
101-250													4	4	3		16
251-500													7	3	9		20
501-750													1	2			4
751-1000														2	1		3
1001-1500													1	2	1		4
>1500													1	3	4		8
Total													24	34	24		93

MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100													42	53	25		41
101-250													17	12	13		17
251-500													29	9	38		22
501-750													4	6			4
751-1000														6	4		3
1001-1500													4	6	4		4
>1500													4	9	17		9

AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)

													3.8	4.5	4.2		4.2

KALISPELL-GLACIER INTERNATIONAL AIRPORT

1978-1979

AFTERNOON MIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100																	
101-250															12		13
251-500													1	2	5		9
501-750													2	3			9
751-1000													4	3	1		9
1001-1500													3	6			9
>1500													11	10	3		27
Total													21	24	21		76

MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100																	
101-250															57		17
251-500													5	9	24		12
501-750													10	13			12
751-1000													19	13	5		12
1001-1500													14	26			12
>1500													52	43	14		36
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)													4.7	5.8	4.1		4.8

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Kalispell
MONTH OR SEASON: Summer 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	7.7	3.1	3.1	10.8	12.3	3.1	7.7	1.5	1.5			50.8
101-250	7.7	1.5	3.1	6.2	6.2	1.5	3.1	3.1	1.5			33.8
251-500	9.7	1.5										10.8
501-750			1.5									1.5
total	24.6	6.2	7.7	16.9	18.5	4.6	10.8	4.6	3.1			96.9

No Inversion 3.1

Total No. of Occurrences

Inversion Type												
1	3.2		1.6	1.6	6.3	1.6	7.9	1.6				23.8
2	3.2		3.2	9.5	3.2	3.2	3.2					25.4
3	11.1	4.8	3.2	6.3	7.9			3.2	1.6			38.1
4	7.9	1.6			1.6				1.6			12.7
5												

MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100		3.3	3.3	6.7		3.3	6.7		3.3			26.7
101-250					3.3			6.7	6.7			16.7
251-500							3.3					3.3
501-750												
Total		3.3	3.3	6.7	3.3	3.3	10.0	6.7	10.0			46.7

No Inversion 53.3

Total No. of Occurrences

Inversion Type												
1							7.1	7.1	7.1			21.4
2			7.1				14.3	7.1	7.1			35.7
3		7.1		14.3	7.1	7.1						35.7
4									7.1			7.1
5												

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Kalsipell
MONTH OR SEASON: Autumn 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Tota
1-100	5.9	3.9	4.9	6.9	6.9	3.9	2.0	2.0	3.9			40.2
101-250	8.8	2.9	1.0	5.9	3.9	2.9	2.9	3.9	7.8			40.2
251-500	5.9		1.0	1.0	2.9	1.0		2.9				14.7
501-750	1.0						1.0		1.0			2.9
total	21.6	6.9	6.9	13.7	13.7	7.8	5.9	8.8	12.7			98.0

No Inversion 2.0

Total No. of Occurrences

Inversion Type												
1	3.0		1.0	3.0	6.0	2.0	3.0	3.0	7.0			28.0
2	2.0	2.0	4.0	7.0	3.0	3.0	1.0	4.0	3.0			29.0
3	6.0	2.0	1.0	3.0	4.0	3.0	2.0	2.0	3.0			26.0
4	11.0	3.0	1.0	1.0	1.0							17.0
5												

MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Tota
1-100			2.2	4.4	8.9	8.9	4.4		8.9			37.8
101-250		2.2		6.7		6.7	6.7	4.4	4.4			31.1
251-500								6.7	6.7			13.3
501-750												
Total		2.2	2.2	11.1	8.9	15.6	11.1	11.1	20.0			82.2

No Inversion 17.8

Total No. of Occurrences

Inversion Type												
1		2.7			2.7	8.1	5.4	5.4	13.5			37.8
2			2.7	5.4	5.4	5.4	8.1	8.1	5.4			40.5
3				8.1	2.7	2.7			5.4			18.9
4						2.7						2.7
5												

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: Kalispell
MONTH OR SEASON: Winter 1978-79 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	12.5	4.7	9.4	10.9	3.1	4.7	3.1	3.1	1.6			53.1
101-250	6.3		3.1	6.3	6.3	3.1	3.1	3.1	3.1			34.4
251-500	1.6	3.1		1.6			3.1	1.6				10.9
501-750												
total	20.3	7.8	12.5	18.8	9.4	7.8	9.4	7.8	4.7			98.4

No Inversion 1.6

Total No. of Occurrences

Inversion Type												
1			1.6	4.8		3.2	4.8	1.6	1.6			17.5
2	4.8	3.2	4.8	7.9	3.2	3.2	3.2	1.6	1.6			33.3
3	9.5	4.8	4.8	3.2	3.2	1.6	1.6	4.8				33.3
4	4.8		1.6	3.2	3.2							12.7
5	1.6								1.6			3.2

MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	1.9	7.5	3.8	3.8	3.8		5.7	3.8	3.8			34.0
101-250	13.2		5.7	13.2		1.9	3.8	7.5				45.3
251-500		3.8				1.9	1.9	1.9				9.4
501-750					1.9							1.9
Total	15.1	11.3	9.4	17.0	5.7	3.8	11.3	13.2	3.8			90.6

No Inversion 9.4

Total No. of Occurrences

Inversion Type												
1	8.3		2.1	4.2		2.1	4.2		2.1			22.9
2	4.2	2.1	4.2	2.1			4.2	6.3	2.1			25.0
3	4.2	4.2	4.2	10.4		8.3	2.1	8.3				41.7
4		6.3		2.1				2.1				10.4
5												

KALISPELL GLACIER INTERNATIONAL AIRPORT

1978-1979

MORNING MIXING HEIGHTS - NUMBER OF OCCURRENCES

THROUGH APRIL

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100		4	6	4	9	5	4	2		4	5		10	18	6	9	43
101-250		3	1	1	2	1		2	1	5	1		4	4	3	6	17
251-500		3	4	1	1	1		3	6	1	3		7	3	9	4	23
501-750		1			1	1				1			1	2		1	4
751-1000				1		1	1				1			2	1	1	4
1001-1500			1			2	1				1		1	2	1	1	5
>1500		1		2		1	2		2		1		1	3	4	1	9
Total		12	12	9	13	12	8	7	9	11	12		24	34	24	23	105

MIXING HEIGHTS - PERCENT OCCURRENCE

THROUGH APRIL

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
0-100		33	50	44	69	42	50	29		36	42		42	53	25	39	41
101-250		25	8	11	15	8		29	11	45	8		17	12	13	26	16
251-500		25	33	11	8	8		43	67	9	25		29	9	38	17	22
501-750		8			8	8				9			4	6		4	4
751-1000				11		8	13				8			6	4	4	4
1001-1500			8			17	13				8		4	6	4	4	5
>1500		8		22		8	25		22		8		4	9	17	4	9
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)																	
		3.8	3.8	6.2	3.3	4.6	4.4	3.1	4.9	4.2	3.3		3.8	4.5	4.2	3.7	4.1

KALISPELL GLACIER INTERNATIONAL AIRPORT
1978-1979

AFTERNOON MIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	THROUGH APRIL ANNUAL
0-100																	
101-250							5	3	4	1					12		13
251-500		1				2		3	2	1	1		1	2	5		10
501-750			2		3					4			2	3			9
751-1000		4		1	1	1	1			1	1		4	3	1		10
1001-1500		2	1	1	3	1					2		3	6			11
>1500		3	8	5	1	4	2		1	3	4		11	10	3		31
Total		10	11	7	8	8	8	6	7	10	8		21	24	21		87

MIXING HEIGHTS - PERCENT OCCURRENCE

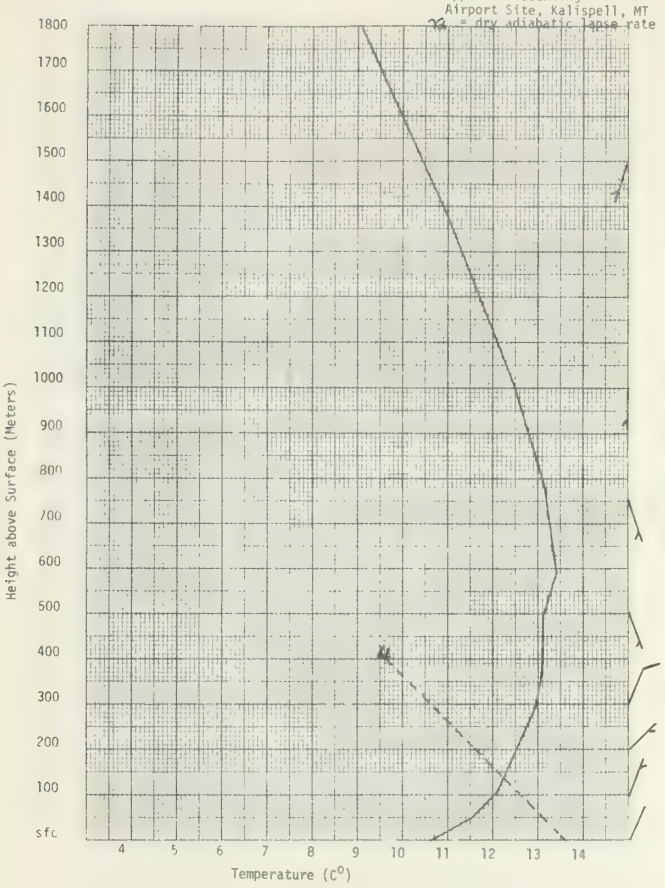
HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	THROUGH APRIL ANNUAL
0-100						11											
101-250							63	50	57	10					57		15
251-500		10				22		50	29	10	13		5	9	24		12
501-750			27		38					40			10	13			11
751-1000		40		29	13	11	13			10	13		19	13	5		12
1001-1500		20	18	14	50	33					25		14	26			13
>1500		30	55	57		22	25		14	30	50		52	43	14		37
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)																	
		4.7	4.7	8.0	4.9	4.8	4.7	2.0	5.2	4.2	5.2		4.7	5.8	4.1		4.8

SITE - Kalispell Glacier International Airport

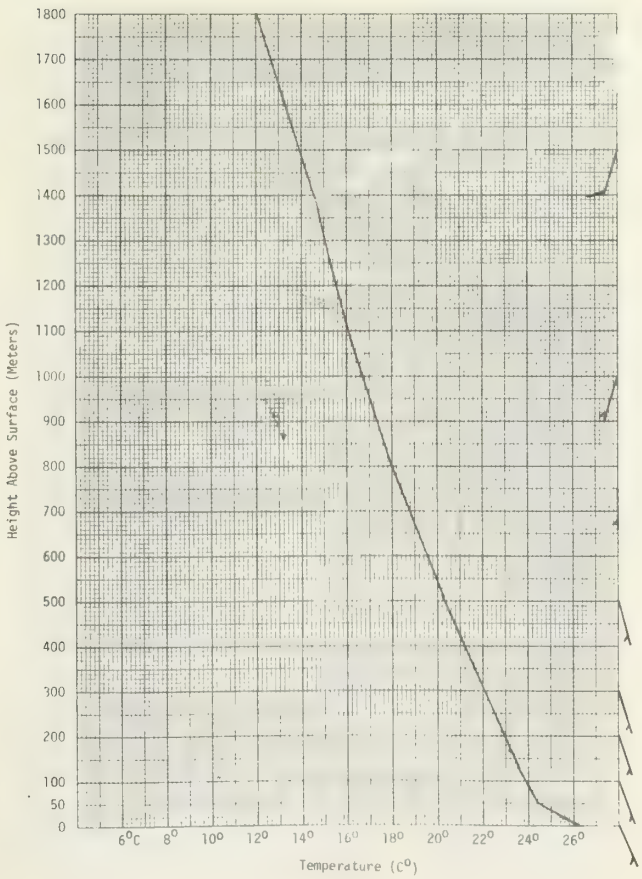
JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - MORNING																
	3.8	3.8	6.2	3.3	4.6	4.4	3.1	4.9	4.2	3.3		3.8	4.5	4.2	3.7	4.1
AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - MORNING																
	-1.62	-.66	-.80	-1.12	-.71	-.95	-.85	-1.16	-1.60	-.74		-1.14	-.89	-1.00	-1.15	-1.00
PERCENT FREQUENCY OF SURFACE BASED FIRST INVERSIONS - MORNING																

JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM	AUT	WIN	SPG	ANNUAL
AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - AFTERNOON																
	4.7	4.7	8.0	4.9	4.8	4.7	2.0	5.2	4.2	5.2		4.7	5.8	4.1		4.8
AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - AFTERNOON																
	-2.59	-1.18	-1.56	-1.23	-1.35	-1.03	-.74	-.41	-1.45	-1.42		-1.85	-1.37	-.74	-1.44	-1.36
PERCENT FREQUENCY OF SURFACED BASED FIRST INVERSIONS - AFTERNOON																

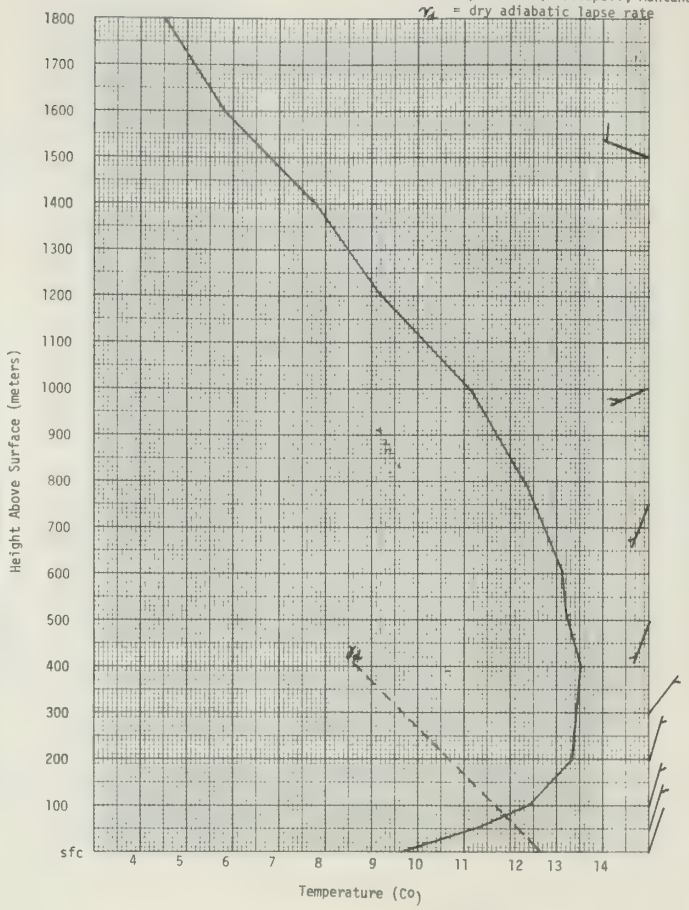
July, 1978
Morning Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT
γ_d = dry adiabatic lapse rate



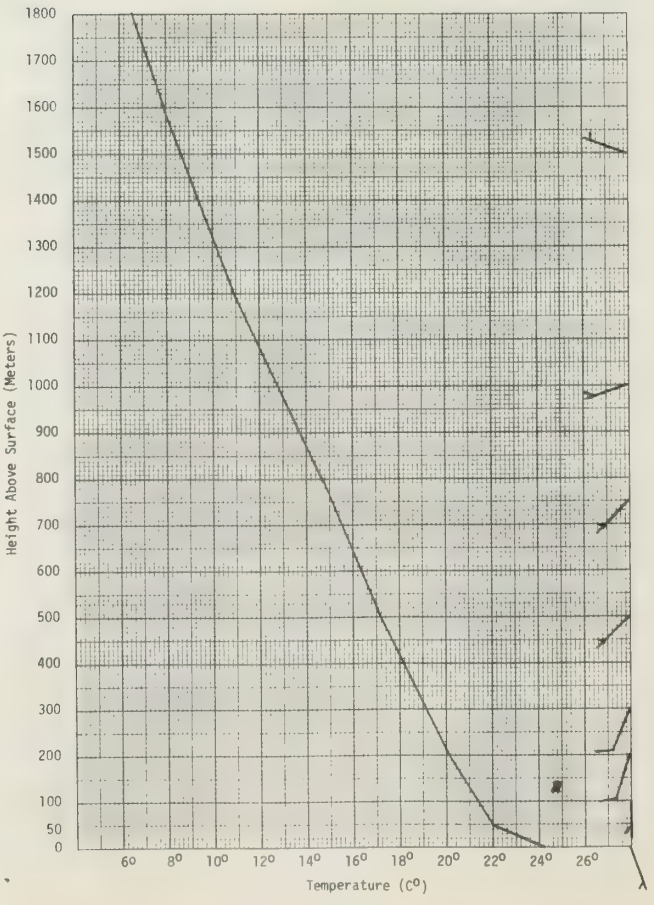
July 1978
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



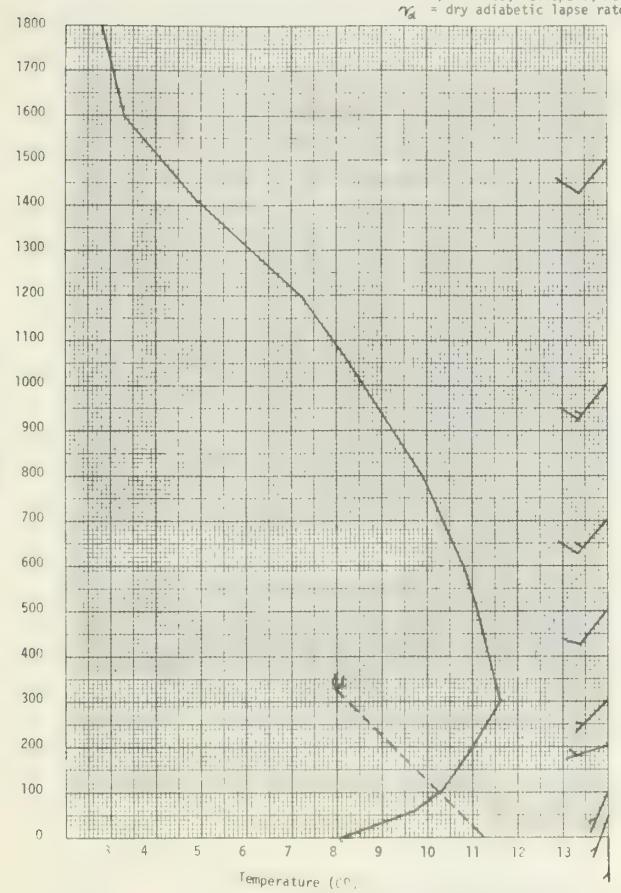
August 1978
Monthly Morning Average
Upper Air Sounding
Airport Site, Kalispell, Montana
γ_d = dry adiabatic lapse rate



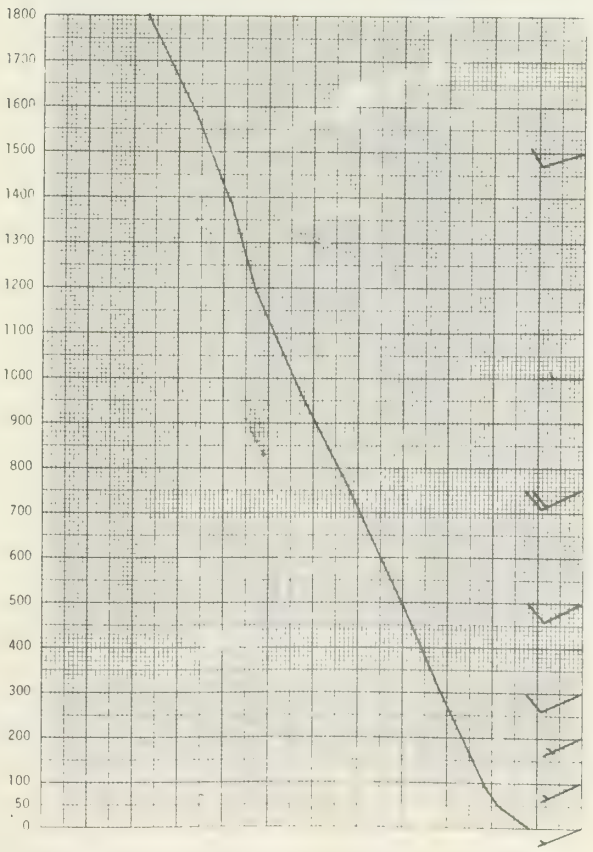
August 1978
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



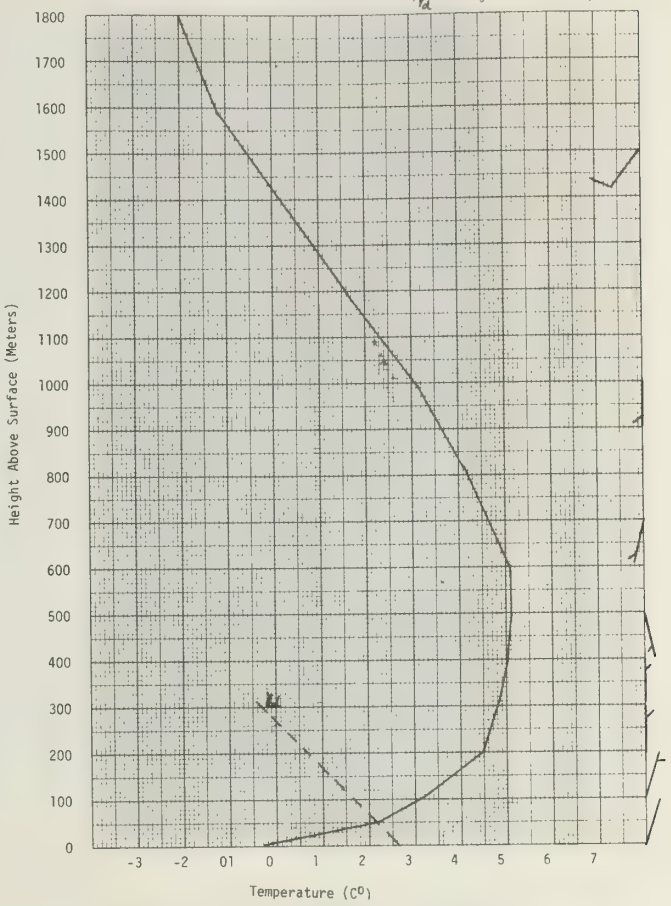
September, 1978
Monthly Morning Average
Upper Air Sounding
Airport Site, Kalispell, Montana
γ_d = dry adiabetic lapse rate



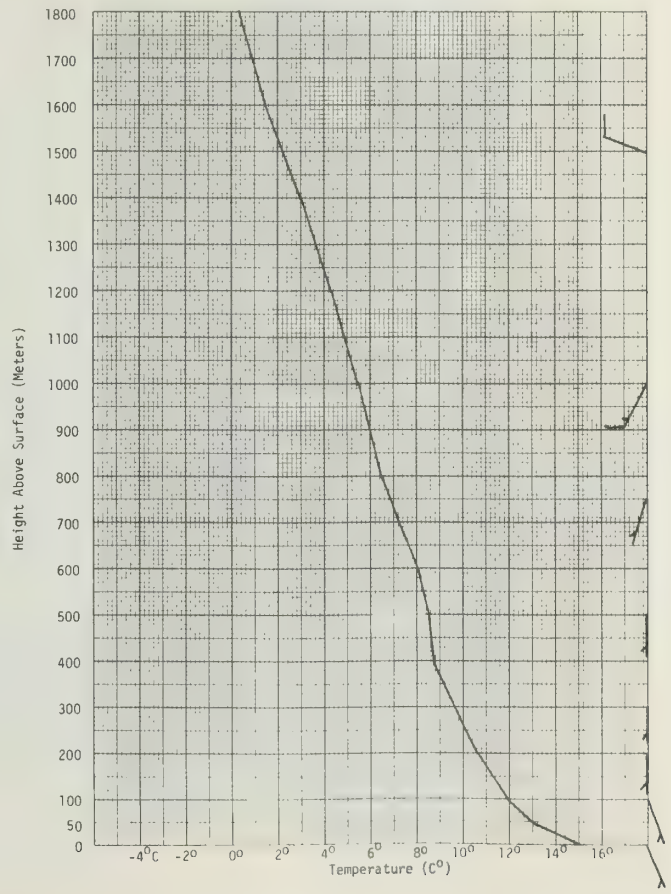
September 1978
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, M



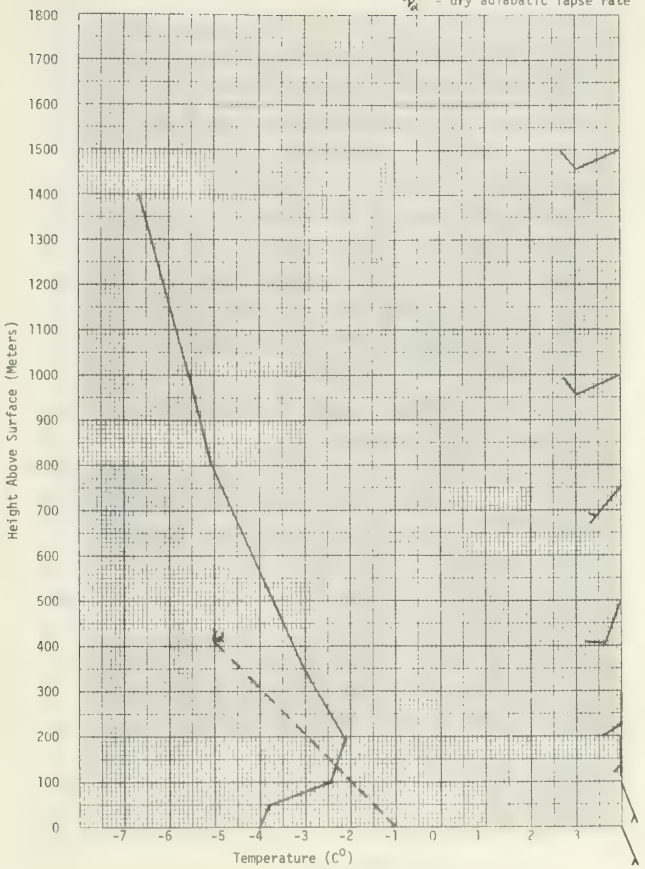
October 1978
Monthly Morning Average
Upper Air Sounding
Airport Site, Kalispell, Montana
γ_d = dry adiabatic lapse rate



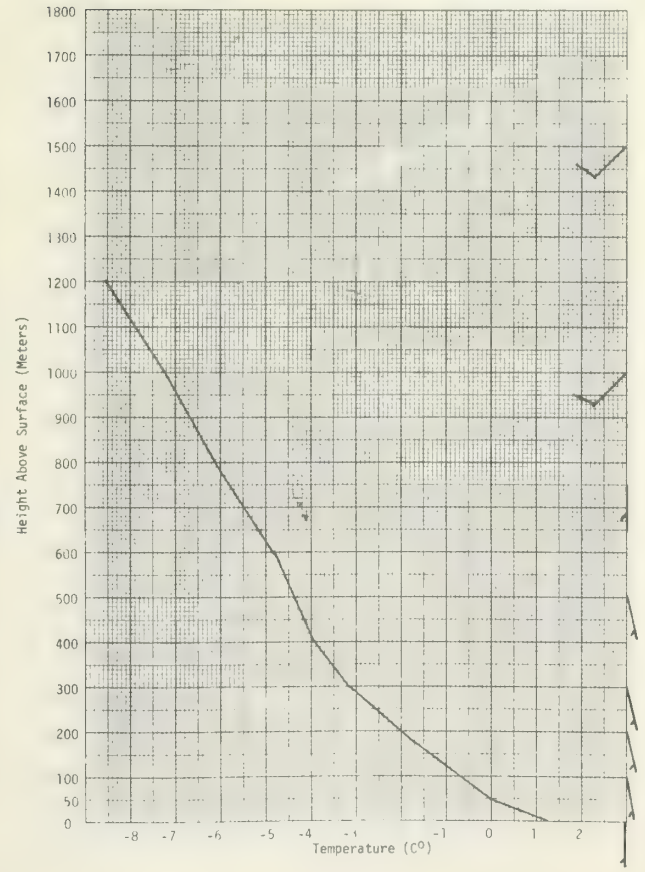
October 1978
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



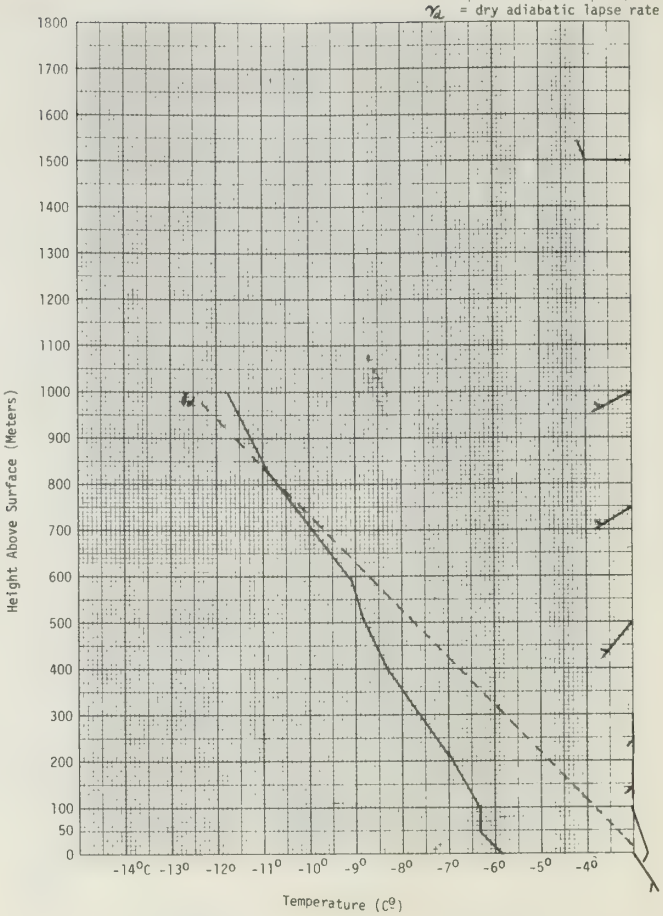
November, 1978
Monthly Morning Average
Upper Air Soundings
Airport Site, Kalispell, Montana
γ_d = dry adiabatic lapse rate



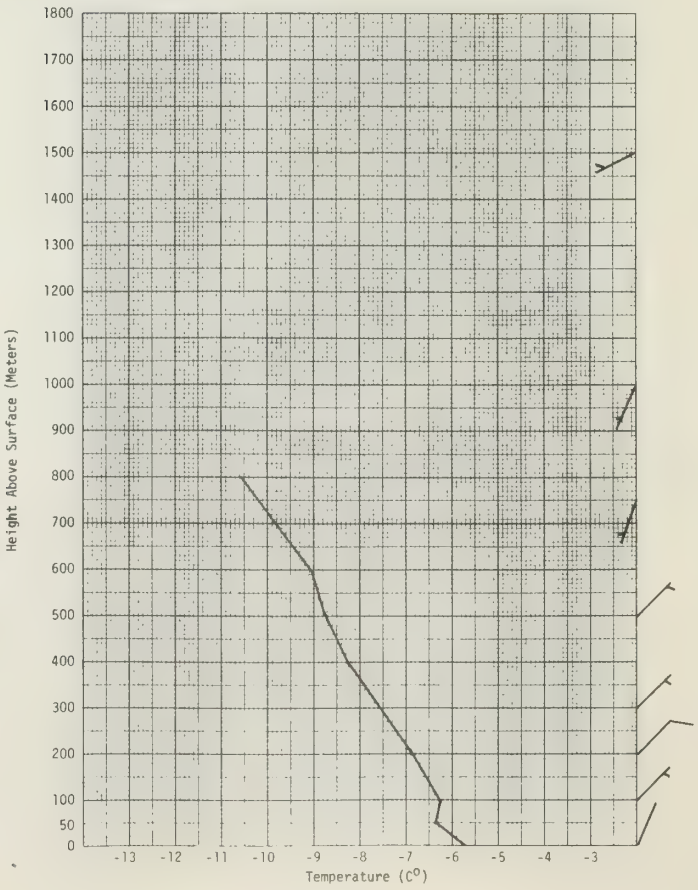
November 1978
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



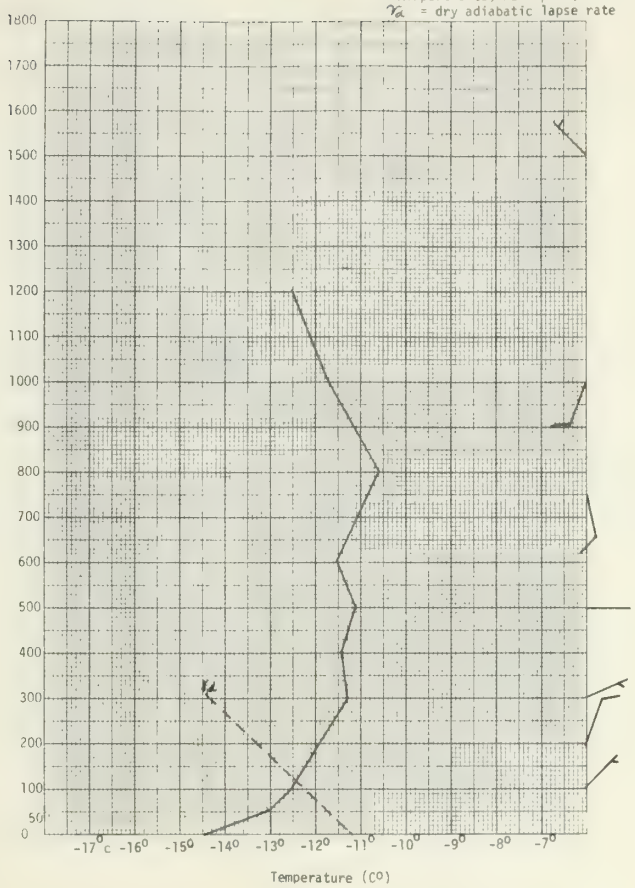
December 1978
Monthly Morning Average
Upper Air Sounding
Air port Site, Kalispell, MT
γ_d = dry adiabatic lapse rate



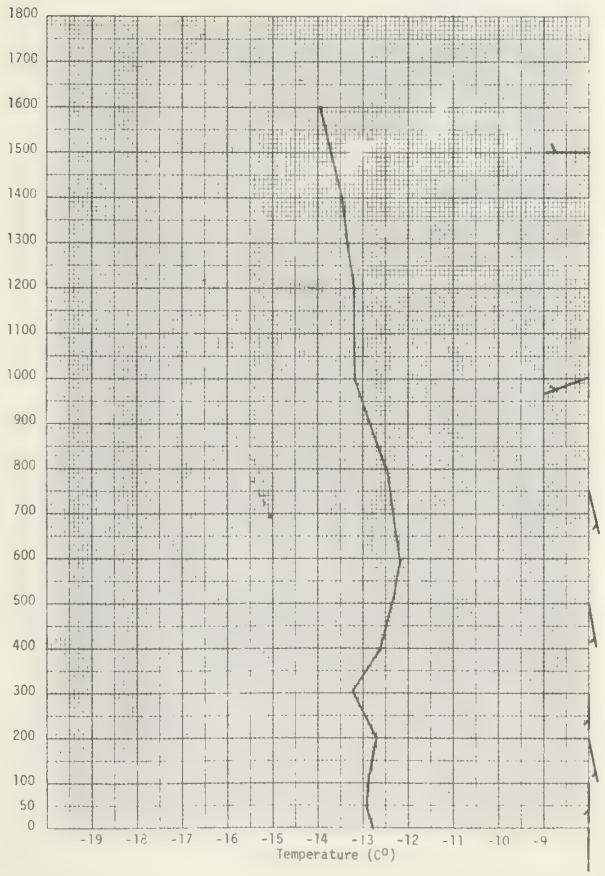
December 1978
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



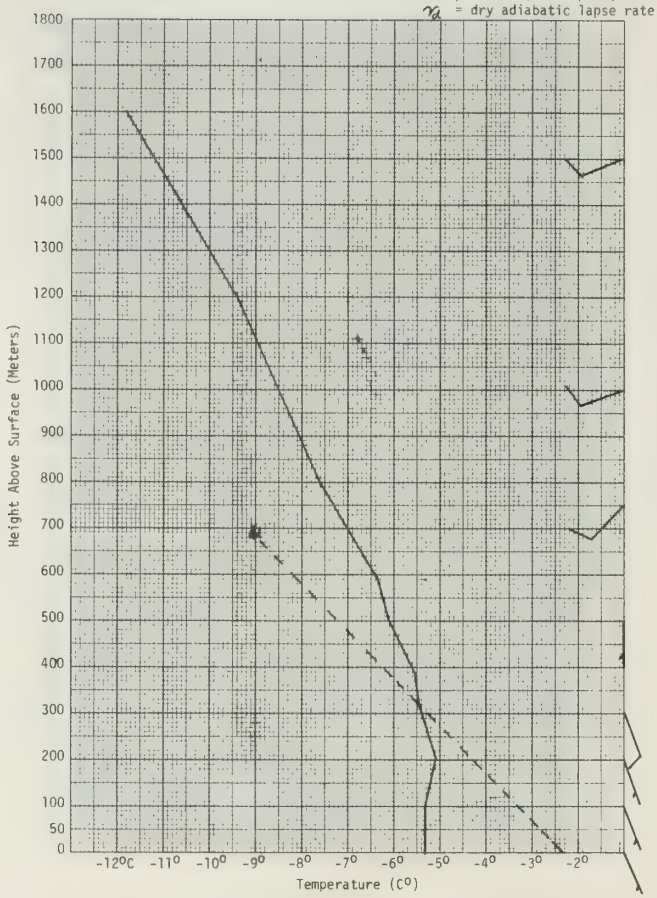
January 1979
Monthly Morning Average
Upper Air Sounding
Airport Site, Kalispell, MT
γ_a = dry adiabatic lapse rate



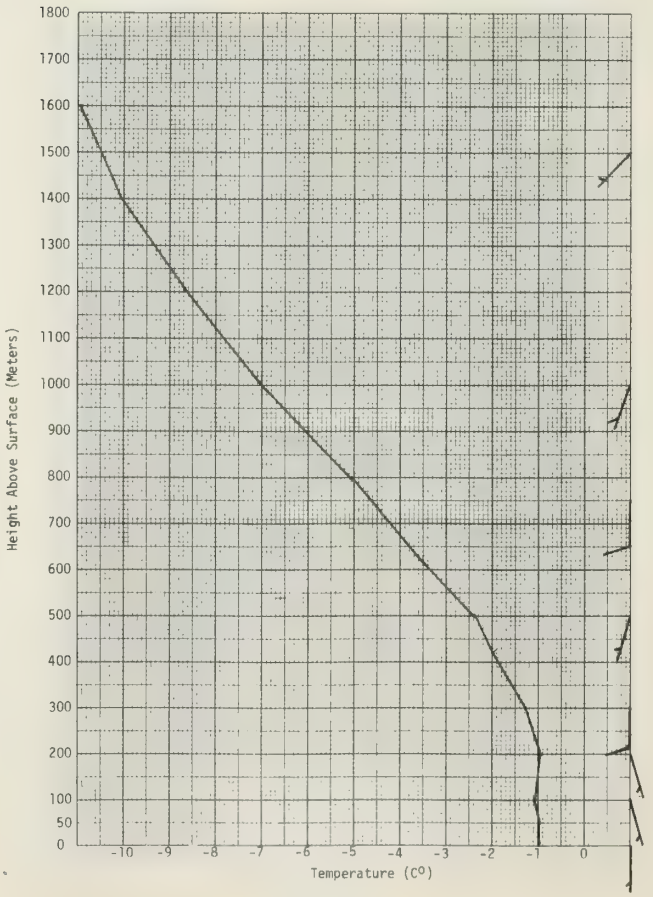
January 1979
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



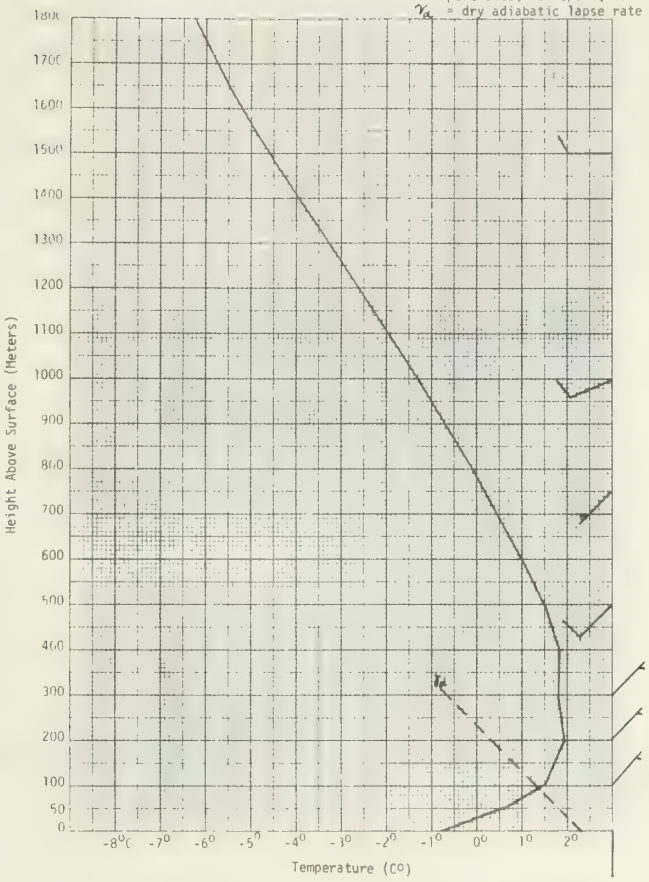
February 1979
Monthly Morning Aserage.
Upper Air Sounding
Airport Site, Kalispell, MT
γ_d = dry adiabatic lapse rate



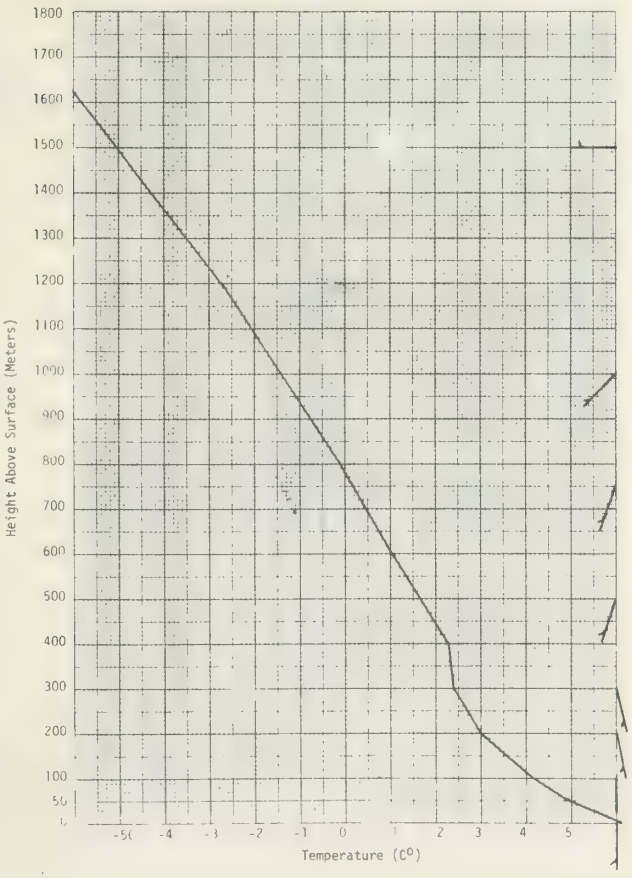
February 1979
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



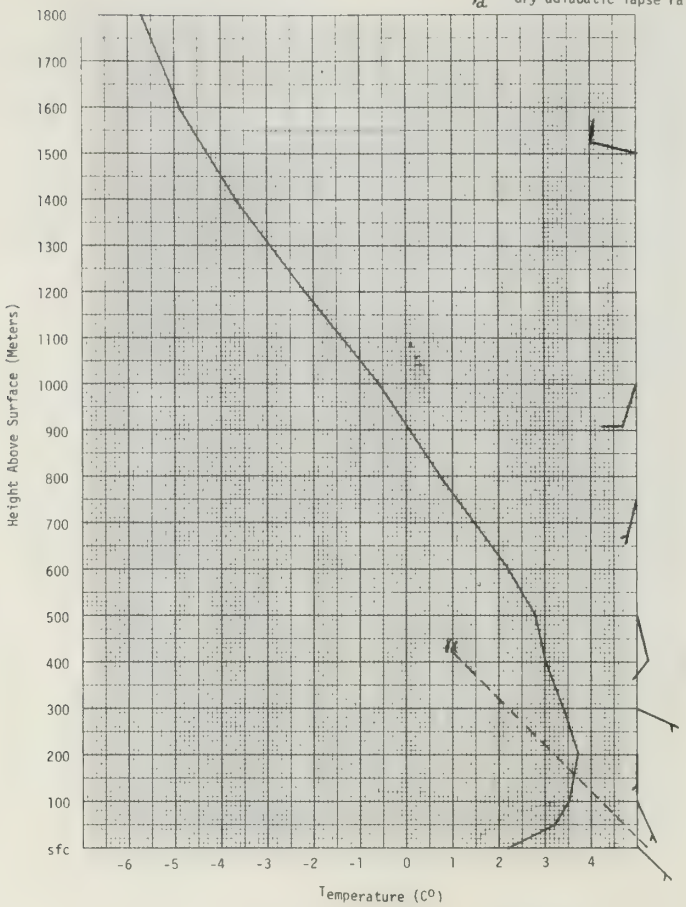
March 1979
Monthly Morning Average
Upper Air Sounding
Airport Site, Kalispell, MT
γ_d = dry adiabatic lapse rate



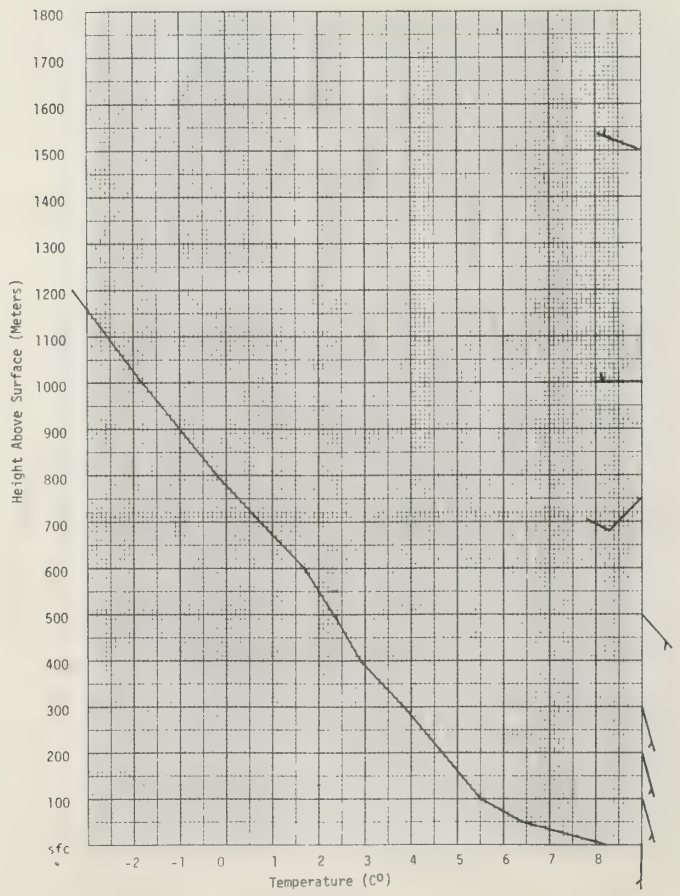
March 1979
Afternoon Monthly Average
Upper Air Sounding
Airport Site, Kalispell, MT



April 1979
Morning Monthly Average
Upper Air Sounding
Kalispell, Montana
γ_d = dry adiabatic lapse rate



April 1979
Afternoon Monthly Average
Upper Air Sounding
Kalispell, Montana



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		14.2					1	14.2	4.0
ENE							0	0.0	
E	14.2						1	14.2	.1
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	14.2						1	14.2	2.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	14.2						1	14.2	1.0
CALM							3	42.0	
COL. TOTALS	42.6	14.2					7		1.0

SURFACE WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		25.0					1	25.0	3.0
S		25.0	25.0				2	50.0	5.5
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						1	25.0	1.5
CALM							0	0.0	
COL. TOTALS	25.0	50.0	25.0				4		.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		14.2					1	14.2	3.9
NNE							0	0.0	
NE	14.2	28.5					3	42.7	3.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			14.2				1	14.2	6.0
S		14.2					1	14.2	4.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	14.2						1	14.2	2.4
CALM							0	0.0	
COL. TOTALS	28.4	56.9	14.2				7		4.0

100 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	1.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			25.0				1	25.0	8.3
S	25.0	25.0					2	50.0	2.6
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0	25.0				4		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		14.2					1	14.2	5.8
NNE			14.2				1	14.2	6.C
NE	14.2						1	14.2	2.9
ENE	14.2						1	14.2	1.6
E							C	C.C	
ESE							0	0.0	
SE		14.2					1	14.2	5.2
SSE			14.2				1	14.2	6.3
S							0	0.0	
SSW							0	0.0	
SW							0	C.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							C	0.0	
NNW			14.2				1	14.2	7.0
CALM							0	0.0	
COL. TOTALS	28.4	28.4	42.6				7		4.9

200 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	2.4
NNE							0	C.C	
NE							0	0.0	
ENE							0	0.0	
E							0	C.C	
ESE							0	0.0	
SE							0	0.0	
SSE		25.0	25.0				2	50.C	6.1
S		25.0					1	25.0	4.0
SSW							0	0.0	
SW							0	0.C	
WSW							0	0.0	
W							0	0.C	
WNW							0	0.0	
NW							0	0.C	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0	25.0				4		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		14.2	14.2				2	28.4	5.7
NE							0	0.0	
ENE		14.2					1	14.2	3.2
E							0	C.C	
ESE							C	0.0	
SE							0	0.0	
SSE		14.2					1	14.2	3.7
S							0	0.0	
SSW	14.2		14.2				2	28.4	4.2
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		14.2					1	14.2	3.8
NNW							0	0.0	
CALM							0	C.C	
COL. TOTALS	14.2	56.8	28.4				7		4.3

300 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	1.8
NNE							0	0.0	
NE							0	0.C	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		50.0	25.0				3	75.0	5.4
S							0	0.0	
SSW							0	0.0	
SW							0	C.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.C	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0	25.0				4		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		16.6					1	16.6	3.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	16.6	16.6	16.6				3	49.8	3.8
SE							0	0.0	
SSE							0	0.0	
S		16.6					1	16.6	5.9
SSW							0	0.0	
SW		16.6					1	16.6	4.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	66.4	16.6				6		4.3

500 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		50.0					2	50.0	5.4
S	25.0						1	25.0	2.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						1	25.0	1.4
CALM							0	0.0	
COL. TOTALS	50.0	50.0					4		.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	25.0						1	25.0	2.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			25.0				1	25.0	9.4
SSE							0	0.0	
S	25.0						1	25.0	2.5
SSW							0	0.0	
SW							0	0.0	
WSW	25.0						1	25.0	1.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	75.0		25.0				4		4.0

750 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	50.0						1	50.0	2.5
S							0	0.0	
SSW							0	0.0	
SW		50.0					1	50.0	4.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		25.0					1	25.0	3.8
ENE							0	0.0	
E							0	0.0	
ESE	25.0					25.0	2	50.0	20.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		25.0					1	25.0	3.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0				25.0	4		11.8

1000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		100.0					1	100.0	5.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		100.0					1		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	100.0						1	100.0	.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						1		.8

1500 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		100.0					1	100.0	8.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		100.0					1		8.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

2000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			100.0				1	100.0	9.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			100.0				1		.1

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JUNE 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.1
NNE	25.0						3	25.0	1.7
NE	8.3						1	8.3	1.5
ENE	8.3						1	8.3	.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3	8.3					2	16.6	2.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	8.3						1	8.3	.5
NW							0	0.0	
NNW	25.0						3	25.0	1.2
CALM							0	0.0	
COL. TOTALS	91.5	8.3					12		1.4

SURFACE WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	10.0						1	10.0	1.3
E							0	0.0	
ESE	10.0						1	10.0	2.6
SE							0	0.0	
SSE			20.0				2	20.0	6.8
S		20.0					2	20.0	3.5
SSW							0	0.0	
SW	20.0						2	20.0	.9
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		10.0					1	10.0	3.0
NNW	10.0						1	10.0	.5
CALM							0	0.0	
COL. TOTALS	50.0	30.0	20.0				10		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6	8.3					3	24.9	2.8
NNE	8.3	8.3	16.6				4	33.2	5.5
NE		8.3					1	8.3	5.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.1
SSE		8.3					1	8.3	5.5
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	.1
WNW							0	0.0	
NW							0	0.0	
NNW		8.3					1	8.3	5.0
CALM							0	0.0	
COL. TOTALS	41.5	41.5	16.6				12		4.0

100 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		10.0					1	10.0	4.3
SSE	20.0	10.0	10.0				4	40.0	3.8
S		10.0					1	10.0	5.4
SSW							0	0.0	
SW	10.0		10.0				2	20.0	5.6
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	10.0						1	10.0	1.5
NNW		10.0					1	10.0	4.4
CALM							0	0.0	
COL. TOTALS	40.0	40.0	20.0				10		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	16.6	8.3					3	24.9	2.6
NNE				8.3			1	8.3	10.6
NE	16.6	16.6					4	33.2	3.4
ENE							0	0.0	
E	8.3						1	8.3	1.2
ESE							0	0.0	
SE							0	0.0	
SSE			8.3				1	8.3	7.7
S	8.3						1	8.3	1.2
SSW	8.3						1	8.3	1.7
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	58.1	24.9	8.3	8.3			12		3.6

200 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	1.1
SE		10.0					1	10.0	4.0
SSE	10.0	10.0	20.0				4	40.0	5.1
S							0	0.0	
SSW							0	0.0	
SW		10.0		10.0			2	20.0	7.6
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		10.0					1	10.0	3.3
NNW			10.0				1	10.0	8.4
CALM							0	0.0	
COL. TOTALS	20.0	40.0	30.0	10.0			10		.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3		8.3				2	16.6	3.8
NNE		16.6		8.3			3	24.9	8.1
NE	8.3						1	8.3	2.5
ENE		8.3					1	8.3	3.1
E							0	0.0	
ESE	8.3						1	8.3	1.1
SE							0	0.0	
SSE			8.3				1	8.3	7.6
S		16.6					2	16.6	5.4
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	1.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	41.5	16.6	8.3			12		4.6

300 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0						1	10.0	1.9
SSE		20.0	30.0				5	50.0	5.9
S							0	0.0	
SSW							0	0.0	
SW	10.0						1	10.0	2.8
WSW			10.0				1	10.0	6.0
W							0	0.0	
WNW							0	0.0	
NW		10.0		10.0			2	20.0	7.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	30.0	40.0	10.0			10		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.9
NNE			8.3				1	8.3	9.5
NE	8.3						1	8.3	1.9
ENE	8.3						1	8.3	.4
E	8.3		8.3				2	16.6	3.8
ESE							0	0.0	
SE		8.3					1	8.3	3.5
SSE		8.3	16.6				3	24.9	6.7
S			8.3				1	8.3	6.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	1.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	16.6	41.5				12		4.5

500 METER LEVEL WINDS AFTERNCON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	10.0	10.0	20.0	10.0			5	50.0	6.3
S							0	0.0	
SSW	10.0						1	10.0	1.7
SW	10.0		10.0				2	20.0	4.7
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW				10.0			1	10.0	12.7
NNW		10.0					1	10.0	3.9
CALM							0	0.0	
COL. TOTALS	30.0	20.0	30.0	20.0			10		5.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	2.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	2.7
SE		9.0	9.0				2	18.0	6.0
SSE	9.0	9.0	18.1				4	36.1	5.2
S	18.1						2	18.1	1.7
SSW			9.0				1	9.0	6.1
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	18.0	36.1				11		4.3

750 METER LEVEL WINDS AFTERNCON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	4.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		10.0					1	10.0	3.3
S	10.0	10.0	10.0				3	30.0	3.8
SSW		20.0					2	20.0	3.8
SW	10.0						1	10.0	2.3
WSW	20.0						2	20.0	2.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	50.0	10.0				10		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	2.1
ENE							0	0.0	
E							0	0.0	
ESE		9.0					1	9.0	3.5
SE	9.0		9.0				2	18.0	4.9
SSE			18.1				2	18.1	6.7
S		18.1					2	18.1	4.7
SSW		9.0		9.0			2	18.0	6.9
SW							0	0.0	
WSW	9.0						1	9.0	1.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	36.1	27.1	9.0			11		4.8

1000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	1.6
NE	10.0						1	10.0	1.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0		10.0				2	20.0	4.9
SSW	10.0	10.0					2	20.0	3.1
SW		10.0					1	10.0	3.3
WSW	10.0	10.0	10.0				3	30.0	4.9
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	30.0	20.0				10		.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	12.5						1	12.5	2.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	12.5						1	12.5	1.1
ESE		12.5					1	12.5	5.0
SE							0	0.0	
SSE							0	0.0	
S		25.0					2	25.0	4.4
SSW		12.5	12.5				2	25.0	5.9
SW							0	0.0	
WSW				12.5			1	12.5	11.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0	12.5	12.5			8		5.0

1500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	14.2						1	14.2	.2
NE							0	0.0	
ENE	14.2						1	14.2	1.5
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE				14.2			1	14.2	10.0
S							0	0.0	
SSW							0	0.0	
SW			14.2				1	14.2	7.2
WSW			14.2	14.2			2	28.4	9.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			14.2				1	14.2	6.6
CALM							0	0.0	
COL. TOTALS	28.4		42.6	28.4			7		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		16.6					1	16.6	3.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			16.6				1	16.6	8.0
SE							0	0.0	
SSE							0	0.0	
S	16.6						1	16.6	2.6
SSW							0	0.0	
SW							0	0.0	
WSW	16.6			16.6			2	33.2	8.4
W		16.6					1	16.6	4.3
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	33.2	16.6	16.6			6		5.8

2000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		20.0					1	20.0	3.5
SSE		20.0					1	20.0	3.9
S	20.0						1	20.0	1.5
SSW							0	0.0	
SW							0	0.0	
WSW					20.0		1	20.0	16.7
W							0	0.0	
WNW							0	0.0	
NW			20.0				1	20.0	6.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0	20.0		20.0		5		6.4

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF JULY 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TC 750	751 TC 1000	1001 TC 1500	1501 TC 2000	2001 TO 2500	2501 TC 3000	> THAN 3000	TOTAL
001-100	8.8		2.9	8.8	8.8	2.9	8.8					41.0
101-250	5.8		2.9	8.8	8.8	2.9	5.8	2.9	2.9			40.8
251-500	8.8	2.9										11.7
501-750												
TOTAL	23.4	2.9	5.8	17.6	17.6	5.8	14.6	2.9	2.9			
NO INVERSION												5.0
									TOTAL NO. OF OCCURENCES			32

INVERSION TYPE											
1	6.2				6.2	3.1	12.5				28.0
2	3.1		6.2	9.3	6.2	3.1	3.1	3.1	3.1		37.2
3	9.3	3.1		9.3	6.2						27.9
4	6.2										6.2
5											

MONTH OF JULY 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TC 1500	1501 TC 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100		5.5	5.5	11.1		5.5	11.1		5.5			44.2
101-250					5.5				5.5			11.0
251-500							5.5					5.5
501-750												
TOTAL		5.5	5.5	11.1	5.5	5.5	16.6		11.0			
NO INVERSION												38.0
									TOTAL NO. OF OCCURENCES			11

INVERSION TYPE											
1							9.0		9.0		18.0
2			9.0				18.1				27.1
3		9.0		18.1	9.0	9.0					45.1
4									9.0		9.0
5											

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF CCCURENCE FCR JULY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNCON CCCURENCES
0- 100	4	0
101- 250	3	0
251- 500	3	1
501- 750	1	0
751-1000	0	4
1001-1500	0	2
>1500	1	3
TOTAL	12	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.8	4.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.62	-02.59

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECCND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TCTAL COUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	33.3						4	33.3	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		8.3					1	8.3	3.1
SE							0	0.0	
SSE	8.3						1	8.3	2.2
S	8.3						1	8.3	1.3
SSW							0	0.0	
SW	8.3						1	8.3	2.2
WSW	16.6						2	16.6	.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	16.6						2	16.6	.6
CALM							0	0.0	
COL. TOTALS	91.4	8.3					12		1.2

SURFACE WINDS AFTERNCON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECCND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TCTAL COUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	15.3						2	15.3	1.3
SE							0	0.0	
SSE	7.6	15.3					3	22.9	3.9
S	15.3						2	15.3	1.7
SSW		15.3					2	15.3	3.8
SW		7.6					1	7.6	3.1
WSW							0	0.0	
W		7.6					1	7.6	4.5
WNW							0	0.0	
NW	7.6						1	7.6	2.2
NNW	7.6						1	7.6	1.0
CALM							0	0.0	
COL. TOTALS	53.4	45.8					13		2.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			16.6				2	16.6	6.9
NNE	8.3	8.3	8.3				3	24.9	4.7
NE		8.3	8.3				2	16.6	7.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		8.3					1	8.3	5.6
S		8.3					1	8.3	4.0
SSW	8.3						1	8.3	2.3
SW		8.3					1	8.3	4.2
WSW							0	0.0	
W	8.3						1	8.3	2.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	41.5	33.2				12		5.0

100 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	7.6						1	7.6	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	15.3						2	15.3	1.3
SE							0	0.0	
SSE	7.6	7.6					2	15.2	3.4
S	15.3	7.6					3	22.9	2.6
SSW		7.6	7.6				2	15.2	6.1
SW		7.6					1	7.6	3.9
WSW							0	0.0	
W	7.6		7.6				2	15.2	5.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	53.4	30.4	15.2				13		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		16.6					2	16.6	5.4
NNE	8.3		16.6				3	24.9	5.9
NE		8.3					1	8.3	3.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			8.3				1	8.3	8.1
S		8.3					1	8.3	4.2
SSW		8.3					1	8.3	4.8
SW		8.3					1	8.3	3.8
WSW	8.3						1	8.3	2.9
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	2.3
CALM							0	0.0	
COL. TOTALS	24.9	49.8	24.9				12		4.8

200 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	7.6						1	7.6	1.1
E	7.6						1	7.6	.6
ESE							0	0.0	
SE	7.6						1	7.6	1.6
SSE	15.3						2	15.3	1.7
S		7.6					1	7.6	3.9
SSW		15.3			7.6		3	22.9	7.9
SW			7.6				1	7.6	6.9
WSW							0	0.0	
W		7.6	7.6				2	15.2	6.2
WNW							0	0.0	
NW							0	0.0	
NNW	7.6						1	7.6	1.3
CALM							0	0.0	
COL. TOTALS	45.7	30.5	15.2		7.6		13		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.9
NNE			8.3				1	8.3	8.5
NE	8.3	16.6					3	24.9	3.8
ENE	8.3						1	8.3	1.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			8.3				1	8.3	9.1
SSW		25.0					3	25.0	3.9
SW		8.3					1	8.3	5.7
WSW	8.3						1	8.3	2.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	49.9	16.6				12		4.4

300 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		7.6					1	7.6	5.8
NE							0	0.0	
ENE							0	0.0	
E	7.6						1	7.6	.6
ESE							0	0.0	
SE	7.6						1	7.6	2.2
SSE	7.6						1	7.6	1.8
S	7.6	7.6					2	15.2	2.6
SSW		7.6	7.6	7.6			3	22.8	7.6
SW			7.6				1	7.6	6.9
WSW							0	0.0	
W	7.6	7.6		7.6			3	22.8	7.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	38.0	30.4	15.2	15.2			13		.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0		9.0				2	18.0	4.2
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	2.6
E	9.0						1	9.0	1.3
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	2.5
S				9.0			1	9.0	13.6
SSW	9.0	9.0	9.0				3	27.0	4.1
SW		9.0	9.0				2	18.0	7.0
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.0	18.0	27.0	9.0			11		5.0

500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	7.6						1	7.6	1.9
SSE							0	0.0	
S		7.6					1	7.6	3.2
SSW	7.6	15.3					3	22.9	3.6
SW		7.6	15.3				3	22.9	6.2
WSW							0	0.0	
W	7.6	7.6		7.6			3	22.8	4.8
WNW	7.6						1	7.6	.9
NW	7.6						1	7.6	1.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	38.0	38.1	15.3	7.6			13		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	2.8
ENE							0	0.0	
E	9.0						1	9.0	2.9
ESE							0	0.0	
SE			9.0				1	9.0	7.4
SSE							0	0.0	
S		9.0					1	9.0	4.4
SSW	18.1		9.0				3	27.1	3.1
SW			9.0		9.0		2	18.0	12.9
WSW		9.0					1	9.0	3.1
W							0	0.0	
WNW							0	0.0	
NW	9.0						1	9.0	2.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	18.0	27.0		9.0		11		5.2

750 METER LEVEL WINDS AFTERNCON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	15.3						2	15.3	1.5
S		7.6					1	7.6	3.1
SSW			7.6				1	7.6	9.2
SW	7.6	7.6	15.3				4	30.5	5.2
WSW	15.3	7.6					3	22.9	2.4
W		7.6		7.6			2	15.2	9.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	38.2	30.4	22.9	7.6			13		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE	10.0						1	10.0	1.2
NE							0	0.0	
ENE							0	0.0	
E					10.0		1	10.0	19.0
ESE		10.0					1	10.0	3.5
SE							0	0.0	
SSE	10.0						1	10.0	1.4
S				10.0			1	10.0	12.4
SSW			10.0				1	10.0	6.1
SW					10.0		1	10.0	16.4
WSW		10.0	10.0				2	20.0	6.3
W	10.0						1	10.0	1.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	20.0	20.0	10.0	20.0		10		7.4

1000 METER LEVEL WINDS AFTERNCON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE					9.0		1	9.0	19.2
ENE			9.0				1	9.0	7.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		9.0					1	9.0	5.4
SW	9.0		9.0				2	18.0	5.2
WSW	9.0		9.0				2	18.0	4.3
W	9.0						1	9.0	.8
WNW							0	0.0	
NW	18.1						2	18.1	1.0
NNW	9.0						1	9.0	1.9
CALM							0	0.0	
COL. TOTALS	54.1	9.0	27.0		9.0		11		5.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		12.5					1	12.5	5.8
SSE							0	0.0	
S	12.5						1	12.5	1.5
SSW							0	0.0	
SW						12.5	1	12.5	37.4
WSW							0	0.0	
W	12.5						1	12.5	2.9
WNW			12.5	12.5			2	25.0	8.4
NW	12.5		12.5				2	25.0	5.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	37.5	12.5	25.0	12.5		12.5	8		9.4

1500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	14.2						1	14.2	2.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			14.2				1	14.2	7.7
SW	14.2						1	14.2	1.4
WSW							0	0.0	
W		14.2	14.2	14.2			3	42.6	8.2
WNW							0	0.0	
NW		14.2					1	14.2	4.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	28.4	28.4	14.2			7		.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		16.6					1	16.6	4.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			16.6				1	16.6	8.4
WNW		16.6					1	16.6	4.8
NW		33.3		16.6			3	49.9	7.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		66.5	16.6	16.6			6		6.8

2000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE						20.0	1	20.0	26.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	20.0						1	20.0	2.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		20.0					1	20.0	5.0
WNW		20.0					1	20.0	5.9
NW	20.0						1	20.0	1.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	40.0				20.0	5		8.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF AUGUST 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	6.4	6.4	3.2	12.9	16.1	3.2	6.4	3.2	3.2			61.0
101-250	9.6	3.2	3.2	3.2	3.2			3.2				25.6
251-500	9.6											9.6
501-750			3.2									3.2
TOTAL	25.6	9.6	9.6	16.1	19.3	3.2	6.4	6.4	3.2			
NO INVERSION												C.C
								TOTAL NO. OF OCCURENCES				31
INVERSION TYPE												
1			3.2	3.2	6.4		3.2	3.2				19.2
2	3.2			9.6		3.2	3.2					19.2
3	12.9	6.4	6.4	3.2	9.6			3.2				41.7
4	9.6	3.2			3.2				3.2			19.2
5												

MONTH OF AUGUST 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100												
101-250								16.6	8.3			24.9
251-500												
501-750												
TOTAL								16.6	8.3			
NO INVERSION												75.0
								TOTAL NO. OF OCCURENCES				3
INVERSION TYPE												
1								33.3				33.3
2								33.3	33.3			66.6
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR AUGUST 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	6	0
101- 250	1	0
251- 500	4	0
501- 750	0	2
751-1000	0	0
1001-1500	1	1
>1500	0	8
TOTAL	12	11
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.8	4.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.66	-01.18

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.1	11.1					2	22.2	3.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	2.2
S	11.1	11.1					2	22.2	2.7
SSW							0	0.0	
SW	11.1						1	11.1	.4
WSW	11.1						1	11.1	.4
W							0	0.0	
WNW	11.1						1	11.1	.9
NW							0	0.0	
NNW	11.1						1	11.1	.7
CALM							0	0.0	
COL. TOTALS	77.7	22.2					9		1.7

SURFACE WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			12.5				1	12.5	6.7
ENE							0	0.0	
E		12.5					1	12.5	4.5
ESE							0	0.0	
SE							0	0.0	
SSE		12.5					1	12.5	3.1
S		25.0					2	25.0	4.2
SSW							0	0.0	
SW			12.5				1	12.5	6.7
WSW	12.5		12.5				2	25.0	5.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	50.0	37.5				8		.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.1			11.1			2	22.2	6.2
NNE		11.1					1	11.1	4.9
NE	11.1						1	11.1	2.8
ENE	22.2						2	22.2	1.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	9.2
SSW		22.2					2	22.2	3.7
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	33.3	11.1	11.1			9		4.5

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				12.5			1	12.5	11.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	12.5		12.5				2	25.0	4.1
S		12.5					1	12.5	3.2
SSW					12.5		1	12.5	16.3
SW							0	0.0	
WSW	12.5		25.0				3	37.5	5.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	12.5	37.5	12.5	12.5		8		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		11.1	11.1				2	22.2	6.9
NE		11.1	11.1				2	22.2	6.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					1	11.1	3.2
S							0	0.0	
SSW				11.1			1	11.1	10.2
SW			11.1				1	11.1	8.9
WSW	11.1	11.1					2	22.2	3.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	44.4	33.3	11.1			9		6.2

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				12.5			1	12.5	11.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			12.5				1	12.5	6.3
S		12.5	12.5				2	25.0	5.7
SSW	12.5						1	12.5	2.1
SW							0	0.0	
WSW	12.5		12.5	12.5			3	37.5	7.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	12.5	37.5	25.0			8		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	8.7
NE		11.1					1	11.1	4.7
ENE		11.1					1	11.1	4.3
E							0	0.0	
ESE	11.1						1	11.1	2.4
SE							0	0.0	
SSE		11.1					1	11.1	5.9
S							0	0.0	
SSW				11.1			1	11.1	10.9
SW	11.1			11.1			2	22.2	6.1
WSW							0	0.0	
W	11.1						1	11.1	2.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	11.1	22.2			9		5.7

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				12.5			1	12.5	10.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		12.5	25.0				3	37.5	6.3
SSW							0	0.0	
SW							0	0.0	
WSW	12.5	12.5		12.5			3	37.5	7.6
W		12.5					1	12.5	4.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0	25.0			8		7.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	9.3
NE							0	0.0	
ENE							0	0.0	
E	22.2						2	22.2	1.8
ESE							0	0.0	
SE							0	0.0	
SSE			11.1				1	11.1	9.1
S			11.1				1	11.1	6.3
SSW		11.1					1	11.1	4.0
SW			11.1	11.1			2	22.2	9.3
WSW							0	0.0	
W		11.1					1	11.1	3.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	22.2	44.4	11.1			9		6.0

500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			12.5				1	12.5	9.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		12.5	12.5				2	25.0	6.2
SSW			12.5				1	12.5	7.2
SW							0	0.0	
WSW		12.5		12.5	12.5		3	37.5	10.6
W		12.5					1	12.5	4.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		37.5	37.5	12.5	12.5		8		.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	6.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		22.2	11.1				3	33.3	5.7
S							0	0.0	
SSW			11.1				1	11.1	9.9
SW			11.1	11.1	11.1		3	33.3	14.0
WSW							0	0.0	
W							0	0.0	
WNW		11.1					1	11.1	3.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	44.4	11.1	11.1		9		8.7

750 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				14.2			1	14.2	12.2
NE							0	0.0	
ENE							0	0.0	
E		14.2					1	14.2	4.2
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		14.2					1	14.2	5.8
SW			14.2				1	14.2	9.0
WSW					14.2		1	14.2	19.7
W	14.2						1	14.2	2.5
WNW				14.2			1	14.2	10.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	28.4	14.2	28.4	14.2		7		9.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	7.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					1	11.1	4.8
S							0	0.0	
SSW							0	0.0	
SW			11.1	11.1	11.1	11.1	4	44.4	16.1
WSW			11.1				1	11.1	6.2
W	11.1						1	11.1	1.6
WNW			11.1				1	11.1	7.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	44.4	11.1	11.1	11.1	9		10.1

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			16.6				1	16.6	8.8
NNE						16.6	1	16.6	29.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			16.6				1	16.6	6.6
SSW							0	0.0	
SW		16.6					1	16.6	5.1
WSW							0	0.0	
W		16.6					1	16.6	3.2
WNW				16.6			1	16.6	10.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.2	33.2	16.6		16.6	6		10.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE					14.2		1	14.2	17.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			14.2				1	14.2	6.6
SSW							0	0.0	
SW		14.2		14.2			2	28.4	9.9
WSW		14.2					1	14.2	4.4
W							0	0.0	
WNW		14.2			14.2		2	28.4	10.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		42.6	14.2	14.2	28.4		7		9.9

1500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N				50.0			1	50.0	10.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				50.0			1	50.0	10.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			2		10.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			25.0				1	25.0	6.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			50.0	25.0			3	75.0	9.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			75.0	25.0			4		8.4

2000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				100.0			1	100.0	10.8
NNE							0	.0	
NE							0	.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			1		10

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF SEPTEMBER 1978 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	4.3	8.6	13.0	13.0	8.6				8.6			56.1
101-250	17.3			4.3	4.3	4.3						30.2
251-500	4.3		4.3									8.6
501-750	4.3											4.3
TOTAL	30.2	8.6	17.3	17.3	12.9	4.3			8.6			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				23

INVERSION TYPE												
1	13.0			4.3	4.3				4.3			25.9
2	4.3		17.3	4.3		4.3			4.3			34.5
3	4.3	4.3		4.3	8.6							21.5
4	8.6	4.3		4.3								17.2
5												

MONTH OF SEPTEMBER 1978 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			12.5	12.5		12.5						37.5
101-250						12.5						12.5
251-500												
501-750												
TOTAL			12.5	12.5		25.0						
NO INVERSION												50.0
								TOTAL NO. OF OCCURENCES				4

INVERSION TYPE												
1						50.0						50.0
2			25.0									25.0
3				25.0								25.0
4												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR SEPTEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	1	0
251- 500	1	0
501- 750	0	0
751-1000	1	1
1001-1500	0	1
>1500	2	5
TOTAL	9	7
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	6.2	8.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.80	-01.56

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	12.5						2	12.5	.8
NNE	25.0						4	25.0	1.1
NE	6.2						1	6.2	.4
ENE	6.2						1	6.2	1.8
E	6.2						1	6.2	1.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		6.2					1	6.2	5.4
SSW		6.2					1	6.2	3.3
SW	12.5						2	12.5	.8
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	6.2						1	6.2	2.2
NNW	6.2						1	6.2	.7
CALM							1	6.0	
COL. TOTALS	81.0	12.4					16		1.4

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.9
NE							0	0.0	
ENE	8.3						1	8.3	.7
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	2.7
SSE	16.6	25.0					5	41.6	2.7
S	8.3						1	8.3	3.9
SSW	25.0						3	25.0	1.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	74.8	25.0					12		2.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	18.7	18.7	6.2				7	43.6	3.5
NE		6.2					1	6.2	4.5
ENE	6.2						1	6.2	1.5
E							0	0.0	
ESE	6.2						1	6.2	1.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			6.2				1	6.2	7.2
SW		6.2	6.2				2	12.4	5.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	6.2						1	6.2	.1
NNW	6.2	6.2					2	12.4	3.3
CALM							0	0.0	
COL. TOTALS	43.5	37.3	18.6				16		3.5

100 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	1.4
E	8.3						1	8.3	.8
ESE							0	0.0	
SE	8.3						1	8.3	2.4
SSE	25.0	16.6					5	41.6	2.7
S	16.6						2	16.6	2.1
SSW	8.3	8.3					2	16.6	3.2
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	74.8	24.9					12		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		6.2	12.5				3	18.7	6.0
NNE		6.2	6.2				2	12.4	4.7
NE		6.2					1	6.2	4.5
ENE	6.2						1	6.2	.9
E	6.2						1	6.2	2.8
ESE							0	0.0	
SE	6.2						1	6.2	2.5
SSE	6.2						1	6.2	1.7
S		6.2					1	6.2	4.3
SSW	6.2	6.2					2	12.4	3.1
SW			6.2	6.2			2	12.4	12.1
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	6.2						1	6.2	2.0
CALM							0	0.0	
COL. TOTALS	37.2	31.0	24.9	6.2			16		4.7

200 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	16.6						2	16.6	1.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	25.0	8.3					4	33.3	3.0
S	8.3	25.0					4	33.3	3.7
SSW	8.3	8.3					2	16.6	3.3
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	58.2	41.6					12		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		12.5	6.2				3	18.7	5.6
NNE		6.2	6.2				2	12.4	5.7
NE		6.2					1	6.2	3.3
ENE							0	0.0	
E							0	0.0	
ESE		6.2					1	6.2	3.9
SE		6.2					1	6.2	5.5
SSE		6.2	6.2				2	12.4	5.9
S		12.5					2	12.5	3.8
SSW		6.2					1	6.2	3.9
SW				6.2			1	6.2	15.0
WSW				6.2			1	6.2	10.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		6.2					1	6.2	3.8
CALM							0	0.0	
COL. TOTALS		68.4	18.6	12.4			16		5.8

300 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	1.1
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.9
SSE		16.6					2	16.6	4.2
S	33.3	16.6					6	49.9	2.3
SSW							0	0.0	
SW	8.3	8.3					2	16.6	3.3
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	58.2	41.5					12		2.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			6.2				1	6.2	6.3
NNE			12.5				2	12.5	7.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			6.2				1	6.2	7.0
SSE		6.2	18.7				4	24.9	6.9
S	6.2						1	6.2	2.8
SSW		6.2					1	6.2	5.5
SW						6.2	1	6.2	33.2
WSW	6.2						1	6.2	.7
W		6.2					1	6.2	5.4
WNW	6.2						1	6.2	2.7
NW							0	0.0	
NNW	6.2	6.2					2	12.4	2.9
CALM							0	0.0	
COL. TOTALS	24.8	24.8	43.6			6.2	16		7.0

500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	1.0
SE							0	0.0	
SSE		16.6		8.3			3	24.9	6.8
S		16.6	16.6				4	33.2	6.2
SSW							0	0.0	
SW			8.3				1	8.3	6.9
WSW	8.3						1	8.3	1.9
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	.3
CALM							0	0.0	
COL. TOTALS	33.2	33.2	24.9	8.3			12		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.1					1	7.1	3.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	7.1						1	7.1	1.9
ESE							0	0.0	
SE		7.1					1	7.1	5.1
SSE		14.2					2	14.2	5.2
S	7.1		7.1				2	14.2	4.5
SSW	7.1	14.2					3	21.3	3.9
SW		7.1					1	7.1	3.1
WSW		7.1					1	7.1	5.2
W							0	0.0	
WNW			7.1				1	7.1	6.9
NW			7.1				1	7.1	8.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	21.3	56.8	21.3				14		4.7

750 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	16.6						2	16.6	1.6
SSE							0	0.0	
S		8.3	16.6				3	24.9	5.5
SSW	8.3	8.3	8.3				3	24.9	4.4
SW	8.3	8.3	8.3				3	24.9	4.4
WSW	8.3						1	8.3	1.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	24.9	33.2				12		4.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0	9.0					2	18.0	1.8
SSW	9.0	18.1					3	27.1	3.8
SW		9.0	9.0				2	18.0	5.8
WSW	9.0						1	9.0	1.8
W		9.0	9.0				2	18.0	4.7
WNW			9.0				1	9.0	6.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	45.1	27.0				11		4.0

1000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N				8.3			1	8.3	12.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	2.4
SSE							0	0.0	
S			8.3				1	8.3	8.1
SSW				8.3			1	8.3	13.3
SW	8.3	8.3	16.6				4	33.2	5.7
WSW		8.3					1	8.3	4.5
W		16.6					2	16.6	5.3
WNW	8.3						1	8.3	.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	33.2	24.9	16.6			12		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	2.6
SSW							0	0.0	
SW		11.1	11.1		11.1		3	33.3	9.6
WSW	11.1		11.1				2	22.2	3.6
W			11.1	11.1			2	22.2	8.3
WNW			11.1				1	11.1	7.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	44.4	11.1	11.1		9		7.0

1500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			11.1	11.1			2	22.2	10.4
W	11.1			11.1			2	22.2	6.1
WNW		11.1	44.4				5	55.5	7.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	55.5	22.2			9		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		28.5					2	28.5	3.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			14.2	14.2			2	28.4	9.5
WNW				14.2	14.2		2	28.4	13.3
NW			14.2				1	14.2	7.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		28.5	28.4	28.4	14.2		7		8.5

2000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		12.5					1	12.5	5.5
W			12.5				1	12.5	7.0
WNW				37.5			3	37.5	12.8
NW		12.5					1	12.5	5.4
NNW			25.0				2	25.0	8.0
CALM							0	0.0	
COL. TOTALS		25.0	37.5	37.5			8		9.0

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF OCTOBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	8.8	2.2		6.6	11.1	6.6	2.2	4.4	2.2			44.1
101-250	4.4	4.4	2.2	6.6	4.4	4.4	2.2	6.6	6.6	2.2		44.0
251-500	8.8			2.2								11.0
501-750												
TOTAL	22.0	6.6	2.2	15.4	15.5	11.0	4.4	11.0	8.8	2.2		
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				45
INVERSION TYPE												
1				2.2	6.6	4.4	2.2	2.2	2.2	2.2		22.0
2	2.2			8.8	4.4	4.4	2.2	6.6	2.2			30.8
3	8.8	2.2		4.4	2.2	2.2		2.2	4.4			26.4
4	11.1	4.4	2.2		2.2							19.9
5												

MONTH OF OCTOBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100					5.8	5.8	11.7		5.8	17.6		46.7
101-250				11.7		5.8		5.8	5.8			29.1
251-500								5.8	5.8			11.6
501-750												
TOTAL				11.7	5.8	11.6	11.7	11.6	17.4	17.6		
NO INVERSION												11.0
								TOTAL NO. OF OCCURENCES				15
INVERSION TYPE												
1									6.6	20.0		26.6
2				13.3	6.6	6.6	13.3	13.3	13.3			66.4
3						6.6						6.6
4												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR OCTOBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	9	0
101- 250	2	0
251- 500	1	0
501- 750	1	3
751-1000	0	1
1001-1500	0	3
>1500	0	1
TOTAL	13	8
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.3	4.9
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.12	-01.23

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.6
NNE							0	0.0	
NE	8.3						1	8.3	1.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.8
SSE	8.3	16.6					3	24.9	4.2
S	8.3						1	8.3	.4
SSW		8.3					1	8.3	3.6
SW	8.3						1	8.3	.4
WSW							0	0.0	
W	8.3						1	8.3	1.1
WNW	8.3						1	8.3	.4
NW							0	0.0	
NNW	8.3						1	8.3	.7
CALM							0	0.0	
COL. TOTALS	66.4	33.2					12		2.1

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		11.1					1	11.1	5.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1	22.2					3	33.3	3.9
S	33.3	11.1					4	44.4	2.0
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	.7
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	55.5	44.4					9		.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3			8.3			2	16.6	6.2
NE	8.3						1	8.3	.3
ENE	8.3						1	8.3	1.8
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	2.0
SSE		8.3	16.6				3	24.9	7.3
S							0	0.0	
SSW			8.3				1	8.3	6.1
SW							0	0.0	
WSW							0	0.0	
W		8.3					1	8.3	3.7
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	2.1
CALM							1	8.0	
COL. TOTALS	41.5	16.6	24.9	8.3			12		4.2

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	7.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	44.4		11.1				5	55.5	2.6
S		11.1		11.1			2	22.2	9.0
SSW	11.1						1	11.1	.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	55.5	11.1	22.2	11.1			9		4.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			8.3				1	8.3	7.5
NE	8.3						1	8.3	.8
ENE	8.3						1	8.3	2.8
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	.3
SSE	8.3			8.3			2	16.6	6.3
S	8.3	16.6		8.3			4	33.2	5.5
SSW							0	0.0	
SW		8.3					1	8.3	5.8
WSW							0	0.0	
W	8.3						1	8.3	2.3
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	24.9	8.3	16.6			12		4.5

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		11.1					1	11.1	3.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	22.2	22.2	33.3				7	77.7	4.4
S	11.1						1	11.1	1.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	33.3				9		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				8.3			1	8.3	11.9
NE	8.3						1	8.3	.8
ENE							0	0.0	
E	8.3						1	8.3	1.4
ESE	8.3						1	8.3	1.6
SE							0	0.0	
SSE	8.3						1	8.3	1.2
S		8.3		8.3	8.3		3	24.9	10.8
SSW		8.3	8.3				2	16.6	5.9
SW	8.3						1	8.3	.7
WSW		8.3					1	8.3	3.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	24.9	8.3	16.6	8.3		12		5.4

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	8.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	22.2						2	22.2	1.2
SSE	11.1	33.3					4	44.4	3.6
S				11.1			1	11.1	10.4
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	.8
CALM							0	0.0	
COL. TOTALS	44.4	33.3	11.1	11.1			9		4.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				8.3			1	8.3	14.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.4
SSE		8.3					1	8.3	4.9
S		8.3		8.3			2	16.6	9.9
SSW	16.6	8.3			8.3		4	33.2	7.5
SW			8.3				1	8.3	8.8
WSW		8.3					1	8.3	5.4
W							0	0.0	
WNW				8.3			1	8.3	11.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	33.2	8.3	24.9	8.3		12		8.0

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE					11.1		1	11.1	17.2
ENE	11.1						1	11.1	.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		22.2	22.2				4	44.4	5.7
S		11.1	11.1				2	22.2	6.3
SSW							0	0.0	
SW				11.1			1	11.1	10.1
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	33.3	11.1	11.1		9		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	8.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			11.1				1	11.1	7.3
S		11.1					1	11.1	3.2
SSW						11.1	1	11.1	27.2
SW		11.1		11.1			2	22.2	7.2
WSW			11.1				1	11.1	6.3
W			11.1				1	11.1	6.7
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	1.5
CALM							0	0.0	
COL. TOTALS	11.1	22.2	44.4	11.1		11.1	9		8.3

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	6.7
ENE			11.1				1	11.1	6.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					1	11.1	4.9
S			22.2				2	22.2	6.1
SSW	11.1						1	11.1	.7
SW		22.2					2	22.2	4.0
WSW			11.1				1	11.1	7.2
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	55.5				9		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	7.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE				11.1			1	11.1	11.5
S							0	0.0	
SSW	11.1						1	11.1	.9
SW			11.1				1	11.1	8.8
WSW		11.1			11.1		2	22.2	10.8
W	11.1			11.1			2	22.2	6.5
WNW				11.1			1	11.1	13.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	22.2	33.3	11.1		9		8.5

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	12.5	12.5		12.5			3	37.5	5.3
SSW	12.5						1	12.5	1.9
SW		25.0	12.5				3	37.5	6.0
WSW							0	0.0	
W							0	0.0	
WNW		12.5					1	12.5	4.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0	12.5	12.5			8		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		14.2					1	14.2	3.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			14.2				1	14.2	7.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					28.5		2	28.5	17.0
W							0	0.0	
WNW		14.2	14.2				2	28.4	7.4
NW							0	0.0	
NNW	14.2						1	14.2	2.1
CALM							0	0.0	
COL. TOTALS	14.2	28.4	28.4		28.5		7		8.9

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE				14.2			1	14.2	12.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	14.2						1	14.2	.8
S							0	0.0	
SSW					14.2		1	14.2	16.1
SW			14.2				1	14.2	8.1
WSW							0	0.0	
W		14.2					1	14.2	5.3
WNW			14.2				1	14.2	9.4
NW							0	0.0	
NNW	14.2						1	14.2	1.1
CALM							0	0.0	
COL. TOTALS	28.4	14.2	28.4	14.2	14.2		7		7.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					50.0		1	50.0	16.3
WNW					50.0		1	50.0	22.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS					100.0		2		19.2

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE			25.0				1	25.0	7.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				25.0			1	25.0	10.9
W		25.0		25.0			2	50.0	8.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0	50.0			4		9.0

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF NOVEMBER 1978 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	2.9	2.9	5.8	2.9		2.9	2.9		2.9			23.2
101-250	8.8	2.9		5.8	2.9		5.8	2.9	5.8	5.8		40.7
251-500	2.9				8.8	2.9		8.8				23.4
501-750							2.9		2.9			5.8
TOTAL	14.6	5.8	5.8	8.7	11.7	5.8	11.6	11.7	11.6	5.8		
NO INVERSION												5.0
								TOTAL NO. OF OCCURENCES				32
INVERSION TYPE												
1			3.1	3.1	6.2		6.2	6.2	6.2	6.2		37.2
2		6.2		6.2	3.1			3.1	3.1			21.7
3	3.1		3.1		3.1	6.2	6.2	3.1	3.1			27.9
4	12.5											12.5
5												

MONTH OF NOVEMBER 1978 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				5.0	15.0	10.0						30.0
101-250		5.0		5.0		5.0	15.0	5.0	5.0			40.0
251-500								10.0	5.0	5.0		20.0
501-750												
TOTAL		5.0		10.0	15.0	15.0	15.0	15.0	10.0	5.0		
NO INVERSION												10.0
								TOTAL NO. OF OCCURENCES				18
INVERSION TYPE												
1		5.5			5.5	5.5	11.1	11.1	5.5			44.2
2					5.5	5.5	5.5	5.5				22.0
3				11.1	5.5				5.5	5.5		27.6
4						5.5						5.5
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR NOVEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	1	0
251- 500	1	2
501- 750	1	0
751-1000	1	1
1001-1500	1	1
>1500	2	4
TOTAL	12	8
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.6	4.8
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.71	-01.35

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	.4
NNE		11.1					1	11.1	5.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1	11.1				2	22.2	6.0
SSE	11.1						1	11.1	2.9
S							0	0.0	
SSW	22.2						2	22.2	2.1
SW		11.1					1	11.1	5.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	.9
CALM							0	0.0	
COL. TOTALS	55.5	33.3	11.1				9		3.4

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	4.0
NNE	22.2						2	22.2	1.0
NE	11.1		11.1				2	22.2	4.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	11.1						1	11.1	1.3
SSE	11.1						1	11.1	1.1
S							0	0.0	
SSW	11.1						1	11.1	.7
SW							0	0.0	
WSW		11.1					1	11.1	4.0
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	22.2	11.1				9		2.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1	11.1					2	22.2	2.8
NNE							0	0.0	
NE			11.1				1	11.1	6.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1		11.1	11.1		3	33.3	11.4
S							0	0.0	
SSW		11.1					1	11.1	4.6
SW		11.1					1	11.1	4.7
WSW							0	0.0	
W							0	0.0	
WNW	11.1						1	11.1	2.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	44.4	11.1	11.1	11.1		9		6.4

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		22.2	22.2				4	44.4	6.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	1.8
S	22.2						2	22.2	1.5
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			11.1				1	11.1	6.3
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	1.5
CALM							0	0.0	
COL. TOTALS	44.4	22.2	33.3				9		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	6.9
NE		11.1					1	11.1	4.6
ENE	11.1						1	11.1	2.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE				11.1			1	11.1	13.4
S		11.1	11.1				2	22.2	5.3
SSW		11.1					1	11.1	3.7
SW			11.1				1	11.1	8.4
WSW			11.1				1	11.1	6.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	44.4	11.1			9		6.2

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	.9
NNE		11.1					1	11.1	4.0
NE		11.1	11.1	11.1			3	33.3	7.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		11.1					1	11.1	3.1
SSW							0	0.0	
SW	11.1						1	11.1	.2
WSW							0	0.0	
W			11.1				1	11.1	7.2
WNW							0	0.0	
NW	11.1						1	11.1	.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	22.2	11.1			9		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	9.4
NE							0	0.0	
ENE		11.1					1	11.1	3.1
E							0	0.0	
ESE		11.1					1	11.1	5.9
SE							0	0.0	
SSE				11.1			1	11.1	12.3
S			22.2				2	22.2	6.7
SSW		11.1					1	11.1	4.2
SW			11.1				1	11.1	7.6
WSW			11.1				1	11.1	7.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	55.5	11.1			9		7.0

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	6.8
NE		11.1	11.1				2	22.2	5.9
ENE	11.1		11.1				2	22.2	4.3
E							0	0.0	
ESE		11.1					1	11.1	3.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	1.5
W				11.1			1	11.1	13.6
WNW							0	0.0	
NW		11.1					1	11.1	4.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	33.3	33.3	11.1			9		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE				11.1			1	11.1	10.4
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	2.6
ESE							0	0.0	
SE				11.1			1	11.1	10.6
SSE							0	0.0	
S			11.1				1	11.1	9.2
SSW		11.1					1	11.1	3.7
SW		11.1	11.1				2	22.2	6.0
WSW		11.1					1	11.1	5.7
W			11.1				1	11.1	7.3
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	33.3	22.2			9		6.8

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE		11.1		11.1			2	22.2	7.7
NE	11.1			11.1			2	22.2	6.3
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	5.1
SE							0	0.0	
SSE		11.1					1	11.1	3.2
S		11.1					1	11.1	3.4
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			11.1				1	11.1	9.9
NW			11.1				1	11.1	8.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	44.4	22.2	22.2			9		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE				12.5			1	12.5	13.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			12.5				1	12.5	8.1
SSE							0	0.0	
S							0	0.0	
SSW		12.5					1	12.5	5.6
SW			12.5				1	12.5	8.3
WSW		25.0	12.5				3	37.5	5.7
W				12.5			1	12.5	10.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		37.5	37.5	25.0			8		7.7

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			16.6				1	16.6	7.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			16.6				1	16.6	9.8
S	16.6						1	16.6	2.8
SSW	16.6	16.6					2	33.2	3.0
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW			16.6				1	16.6	8.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	16.6	49.8				6		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

700 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE			20.0				1	20.0	6.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			40.0				2	40.0	7.2
W		20.0					1	20.0	4.3
WNW				20.0			1	20.0	10.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	60.0	20.0			5		7.0

700 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		20.0					1	20.0	3.8
SE							0	0.0	
SSE							0	0.0	
S			20.0				1	20.0	9.9
SSW		20.0					1	20.0	3.0
SW							0	0.0	
WSW			20.0				1	20.0	8.4
W							0	0.0	
WNW							0	0.0	
NW			20.0				1	20.0	6.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		40.0	60.0				5		6.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			50.0				1	50.0	6.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			50.0				1	50.0	9.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			100.0				2		8.1

1500 METER LEVEL WINDS AFTERNCON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE				25.0			1	25.0	11.7
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		25.0	25.0				2	50.0	6.2
W							0	0.0	
WNW							0	0.0	
NW						25.0	1	25.0	25.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0	25.0		25.0	4		12.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

2000 METER LEVEL WINDS AFTERNCON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			100.0				1	100.0	6.1
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			100.0				1		6.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF DECEMBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	15.7		10.5	10.5	5.2	10.5	5.2	10.5	5.2			73.3
101-250	10.5			5.2								15.7
251-500							5.2					5.2
501-750												
TOTAL	26.2		10.5	15.7	5.2	10.5	10.4	10.5	5.2			
NO INVERSION												5.0
									TOTAL NO. OF OCCURENCES			18

INVERSION TYPE												
1			5.5	5.5		5.5	5.5	5.5				27.5
2	5.5			5.5		5.5	5.5	5.5				27.5
3			5.5		5.5							11.0
4	16.6			5.5								22.1
5	5.5								5.5			11.0

MONTH OF DECEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100		15.3					7.6		7.6			30.5
101-250			15.3	7.6		7.6	7.6					38.1
251-500						7.6						7.6
501-750												
TOTAL		15.3	15.3	7.6		15.2	15.2		7.6			
NO INVERSION												23.0
									TOTAL NO. OF OCCURENCES			10

INVERSION TYPE												
1						10.0			10.0			20.0
2			20.0				10.0					30.0
3				10.0		10.0	10.0					30.0
4		20.0										20.0
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR DECEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	0	5
251- 500	0	0
501- 750	0	0
751-1000	1	0
1001-1500	1	0
>1500	2	2
TOTAL	8	7
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.4	4.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.95	-01.03

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0	12.5					3	37.5	2.0
NNE		12.5					1	12.5	4.2
NE							0	0.0	
ENE							0	0.0	
E	12.5						1	12.5	.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	12.5						1	12.5	.7
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	12.5						1	12.5	.4
NNW	12.5						1	12.5	2.5
CALM							0	0.0	
COL. TOTALS	75.0	25.0					8		1.8

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	16.6						2	16.6	.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	41.6						5	41.6	1.1
SSW	16.6						2	16.6	1.5
SW	8.3						1	8.3	1.4
WSW	8.3						1	8.3	.7
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	99.7						12		1.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		12.5					1	12.5	5.8
NNE			12.5				1	12.5	5.7
NE	12.5	12.5					2	25.0	3.2
ENE		12.5					1	12.5	5.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	12.5						1	12.5	1.7
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	12.5						1	12.5	.5
WNW							0	0.0	
NW							0	0.0	
NNW	12.5						1	12.5	1.9
CALM							0	0.0	
COL. TOTALS	50.0	37.5	12.5				8		3.8

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	2.4
E	16.6						2	16.6	1.2
ESE							0	0.0	
SE	8.3						1	8.3	.5
SSE							0	0.0	
S	16.6	25.0					5	41.6	2.4
SSW	16.6						2	16.6	1.4
SW	8.3						1	8.3	.8
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	74.7	25.0					12		1.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			12.5	12.5			2	25.0	10.3
NE		12.5					1	12.5	3.7
ENE		12.5					1	12.5	5.7
E							0	0.0	
ESE							0	0.0	
SE	12.5						1	12.5	1.2
SSE		25.0					2	25.0	4.4
S	12.5						1	12.5	.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0	12.5	12.5			8		5.0

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.2
NE	8.3	8.3					2	16.6	3.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.4
SSE		16.6					2	16.6	4.7
S							0	0.0	
SSW	16.6						2	16.6	1.0
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	16.6						2	16.6	1.0
NNW	16.6						2	16.6	.6
CALM							0	0.0	
COL. TOTALS	74.7	24.9					12		1.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				14.2			1	14.2	14.0
NE		14.2					1	14.2	3.1
ENE		14.2					1	14.2	4.0
E	14.2						1	14.2	.3
ESE	14.2						1	14.2	1.4
SE							0	0.0	
SSE			14.2				1	14.2	9.0
S		14.2					1	14.2	4.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	42.6	14.2	14.2			7		5.1

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		16.6					2	16.6	3.4
NE		8.3					1	8.3	3.1
ENE							0	0.0	
E	8.3						1	8.3	1.5
ESE							0	0.0	
SE							0	0.0	
SSE		16.6					2	16.6	4.5
S		8.3					2	16.6	2.7
SSW	16.6						2	16.6	1.3
SW							0	0.0	
WSW	8.3						1	8.3	.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	2.5
CALM							0	0.0	
COL. TOTALS	49.8	49.8					12		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			16.6				1	16.6	7.8
NE							0	0.0	
ENE							0	0.0	
E	50.0						3	50.0	2.4
ESE							0	0.0	
SE							0	0.0	
SSE			16.6				1	16.6	8.0
S							0	0.0	
SSW		16.6					1	16.6	5.1
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	16.6	33.2				6		4.7

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	16.6		8.3				3	24.9	4.0
NE		8.3					1	8.3	5.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.5
SSE	8.3	16.6	16.6				5	41.5	4.3
S							0	0.0	
SSW	8.3						1	8.3	.8
SW							0	0.0	
WSW		8.3					1	8.3	4.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	33.2	24.9				12		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			20.0				1	20.0	9.0
NE							0	0.0	
ENE							0	0.0	
E	20.0						1	20.0	2.0
ESE							0	0.0	
SE							0	0.0	
SSE			20.0				1	20.0	9.4
S			20.0				1	20.0	7.9
SSW							0	0.0	
SW			20.0				1	20.0	6.7
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		80.0				5		7.0

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3	8.3					2	16.6	2.0
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	16.6	8.3	8.3				4	33.2	3.1
S							0	0.0	
SSW		8.3					1	8.3	4.3
SW		16.6					2	16.6	3.4
WSW		8.3					1	8.3	4.9
W							0	0.0	
WNW		8.3					1	8.3	4.9
NW	8.3						1	8.3	1.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	58.1	8.3				12		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		33.3					1	33.3	3.4
S							0	0.0	
SSW	33.3						1	33.3	1.8
SW			33.3				1	33.3	6.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	33.3				3		3.9

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	3.7
S		18.1					2	18.1	4.5
SSW							0	0.0	
SW	9.0	9.0					2	18.0	3.2
WSW	9.0	18.1	9.0				4	36.1	4.3
W	9.0	9.0					2	18.0	2.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	63.2	9.0				11		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		100.0					1	100.0	4.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		100.0					1		4.8

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	5.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	10.0						1	10.0	2.5
SW	10.0						1	10.0	1.5
WSW				10.0			1	10.0	11.4
W		20.0	10.0				3	30.0	5.4
WNW		10.0	10.0				2	20.0	5.2
NW			10.0				1	10.0	6.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0	30.0	10.0			10		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS							0		

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		20.0	20.0				2	40.0	5.8
WNW			20.0				1	20.0	6.5
NW			40.0				2	40.0	7.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	80.0				5		6.6

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	4.5		4.5	4.5		4.5	4.5					22.5
101-250	4.5		4.5	13.6	13.6		9.0		9.0			54.2
251-500	4.5	9.0					4.5	4.5				22.5
501-750												
TOTAL	13.5	9.0	9.0	18.1	13.6	4.5	18.0	4.5	9.0			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				22
INVERSION TYPE												
1				4.5		4.5	9.0		4.5			22.5
2		4.5	9.0	9.0	4.5		4.5		4.5			36.0
3	13.6	4.5					4.5	4.5				27.1
4				4.5	9.0							13.5
5												

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100		4.1		4.1	8.3			8.3	4.1			28.9
101-250	16.6			20.8				12.5				49.9
251-500		8.3					4.1	4.1				16.5
501-750					4.1							4.1
TOTAL	16.6	12.4		24.9	12.4		4.1	24.9	4.1			
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				24
INVERSION TYPE												
1	8.3			8.3								16.6
2	4.1	4.1		4.1				8.3	4.1			24.7
3	4.1	8.3		8.3	12.5		4.1	12.5				49.8
4				4.1				4.1				8.2
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1975

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	2	3
251- 500	3	3
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	7	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.1	2.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.85	-00.74

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING FEBRUARY,1975

DIRECTION	******** WIND SPEEDS METERS/SECOND ********						******** SUMMARY ********		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	22.2						2	22.2	1.5
NNE	11.1	11.1					2	22.2	2.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1					1	11.1	4.4
SSE	11.1	22.2					3	33.3	3.3
S		11.1					1	11.1	3.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	55.5					9		2.9

SURFACE WINDS AFTERNOON FEBRUARY,1975

DIRECTION	******** WIND SPEEDS METERS/SECOND ********						******** SUMMARY ********		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	9.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	11.1	11.1					2	22.2	3.6
SSE		11.1					1	11.1	5.1
S	11.1	11.1					2	22.2	3.1
SSW	11.1						1	11.1	.7
SW	11.1						1	11.1	1.7
WSW							0	0.0	
W							0	0.0	
WNW	11.1						1	11.1	1.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	55.5	33.3	11.1				9		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.1
NNE		11.1	11.1				2	22.2	4.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	.7
SE							0	0.0	
SSE		11.1	33.3				4	44.4	6.9
S							0	0.0	
SSW	11.1						1	11.1	2.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	22.2	44.4				9		4.6

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1			11.1			2	22.2	6.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		44.4	11.1				5	55.5	6.0
S							0	0.0	
SSW	22.2						2	22.2	2.1
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	44.4	11.1	11.1			9		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	6.3
ENE	11.1						1	11.1	2.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1			22.2			3	33.3	7.5
S	22.2						2	22.2	2.5
SSW			11.1				1	11.1	6.7
SW							0	0.0	
WSW							0	0.0	
W	11.1						1	11.1	1.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	55.5		22.2	22.2			9		4.9

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	3.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	1.7
SE		11.1					1	11.1	4.5
SSE		22.2	33.3	11.1			6	66.6	6.5
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	44.4	33.3	11.1			9		5.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	2.9
ESE							0	0.0	
SE							0	0.0	
SSE	11.1			22.2			3	33.3	8.2
S		11.1	11.1				2	22.2	5.9
SSW							0	0.0	
SW			22.2				2	22.2	6.2
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	.9
CALM							0	0.0	
COL. TOTALS	33.3	11.1	33.3	22.2			9		5.8

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	2.1
SE							0	0.0	
SSE		22.2		11.1			3	33.3	7.2
S			33.3	11.1			4	44.4	8.7
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	2.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	22.2	33.3	22.2			9		6.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	2.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			11.1				1	11.1	6.2
SSE		11.1					1	11.1	3.5
S			22.2				2	22.2	7.3
SSW	22.2						2	22.2	2.3
SW			11.1				1	11.1	9.9
WSW							0	0.0	
W		11.1					1	11.1	4.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	22.2	44.4				9		5.0

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	6.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1	33.3				4	44.4	6.4
S			44.4				4	44.4	7.9
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		11.1	88.8				9		7.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		12.5					1	12.5	5.0
S							0	0.0	
SSW			12.5				1	12.5	9.7
SW		12.5	12.5	12.5			3	37.5	8.7
WSW	12.5	25.0					3	37.5	3.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	50.0	25.0	12.5			8		6.4

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			33.3	22.2			5	55.5	8.7
SSW							0	0.0	
SW		11.1	11.1				2	22.2	6.7
WSW		11.1					1	11.1	5.9
W							0	0.0	
WNW							0	0.0	
NW		11.1					1	11.1	5.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	44.4	22.2			9		7.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			16.6				1	16.6	9.9
SSW							0	0.0	
SW			16.6	16.6			2	33.2	9.2
WSW			16.6	33.3			3	49.9	11.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			49.8	49.9			6		10.2

1000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				14.2			1	14.2	11.6
SSW		14.2	14.2				2	28.4	6.5
SW		14.2					1	14.2	5.7
WSW		14.2	14.2				2	28.4	6.1
W							0	0.0	
WNW	14.2						1	14.2	2.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	42.6	28.4	14.2			7		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	10.1
WSW		25.0				25.0	2	50.0	30.7
W			25.0				1	25.0	9.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0	25.0		25.0	4		20.3

1500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		20.0					1	20.0	3.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				20.0			1	20.0	12.0
SSW							0	0.0	
SW		20.0					1	20.0	4.8
WSW			20.0				1	20.0	6.1
W					20.0		1	20.0	17.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		40.0	20.0	20.0	20.0		5		8.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				33.3			1	33.3	15.8
WSW				33.3			1	33.3	11.3
W				33.3			1	33.3	14.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				99.9			3		13.9

2000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				100.0			1	100.0	11.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				100.0			1		11.8

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF FEBRUARY 1979 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	17.3	13.0	13.0	17.3	4.3							64.9
101-250	4.3		4.3		4.3	8.6		8.6				30.1
251-500				4.3								4.3
501-750												
TOTAL	21.6	13.0	17.3	21.6	8.6	8.6		8.6				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				23
INVERSION TYPE												
1				4.3								4.3
2	8.6	4.3	4.3	8.6	4.3	4.3						34.4
3	13.0	8.6	8.6	8.6	4.3	4.3		8.6				56.0
4			4.3									4.3
5												

MONTH OF FEBRUARY 1979 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	6.2	6.2	12.5	6.2			12.5					43.6
101-250	18.7		6.2	6.2			6.2	6.2				43.5
251-500												
501-750												
TOTAL	24.9	6.2	18.7	12.4			18.7	6.2				
NO INVERSION												12.0
								TOTAL NO. OF OCCURE				14
INVERSION TYPE												
1	14.2		7.1				14.2					35.5
2	7.1						7.1	7.1				21.3
3	7.1		14.2	14.2								35.5
4		7.1										7.1
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR FEBRUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	1	4
251- 500	6	2
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	2	1
TOTAL	9	7
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.9	5.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.16	-00.41

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.0
NNE							0	0.0	
NE	9.0						1	9.0	.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	2.0
SSE		18.1					2	18.1	3.9
S	9.0						1	9.0	.8
SSW	9.0	9.0					2	18.0	2.6
SW							0	0.0	
WSW	18.1						2	18.1	1.4
W							0	0.0	
WNW							0	0.0	
NW	9.0						1	9.0	2.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	63.1	36.1					11		2.2

SURFACE WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3	8.3					2	16.6	2.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	2.2
SSE							0	0.0	
S		25.0	8.3				4	33.3	4.4
SSW	8.3	8.3					2	16.6	3.2
SW		8.3					1	8.3	5.4
WSW		8.3					1	8.3	5.1
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	1.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	58.2	8.3				12		3.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	6.7
NNE	9.0		9.0				2	18.0	5.1
NE	9.0						1	9.0	2.6
ENE	18.1						2	18.1	2.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			18.1				2	18.1	8.0
S		9.0					1	9.0	3.5
SSW							0	0.0	
SW				9.0			1	9.0	10.0
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	9.0						1	9.0	.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	9.0	36.1	9.0			11		4.9

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.8
NE		8.3					1	8.3	3.2
ENE							0	0.0	
E	8.3						1	8.3	1.5
ESE							0	0.0	
SE							0	0.0	
SSE		8.3	8.3				2	16.6	6.0
S	25.0						3	25.0	11.6
SSW		8.3					1	8.3	3.0
SW	8.3		8.3				2	16.6	4.9
WSW							0	0.0	
W			8.3				1	8.3	6.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.9	24.9	24.9				12		3.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0	9.0	9.0				3	27.0	4.9
NE	9.0	9.0	9.0				3	27.0	5.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			18.1				2	18.1	6.6
S							0	0.0	
SSW			9.0				1	9.0	6.4
SW			9.0				1	9.0	8.2
WSW	9.0						1	9.0	2.3
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	18.0	54.1				11		5.4

200 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.6
NE		8.3					1	8.3	3.1
ENE	8.3						1	8.3	1.5
E							0	0.0	
ESE	8.3						1	8.3	1.5
SE							0	0.0	
SSE	8.3	25.0					4	33.3	3.6
S		8.3					1	8.3	4.0
SSW							0	0.0	
SW	8.3		8.3				2	16.6	4.2
WSW							0	0.0	
W			8.3				1	8.3	7.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	41.6	16.6				12		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	4.1
NNE	9.0			9.0			2	18.0	6.2
NE	9.0		9.0				2	18.0	4.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	2.4
S			9.0				1	9.0	6.9
SSW	9.0	9.0	9.0				3	27.0	5.2
SW				9.0			1	9.0	11.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.0	18.0	27.0	18.0			11		5.7

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.2
NE		8.3					1	8.3	3.8
ENE	8.3						1	8.3	.7
E							0	0.0	
ESE	8.3						1	8.3	2.6
SE							0	0.0	
SSE		25.0					3	25.0	5.2
S			8.3				1	8.3	6.6
SSW	8.3						1	8.3	2.6
SW							0	0.0	
WSW	8.3	8.3					2	16.6	4.1
W			8.3				1	8.3	8.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	41.5	41.6	16.6				12		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			9.0				1	9.0	7.3
NE			9.0				1	9.0	6.3
ENE							0	0.0	
E	9.0						1	9.0	1.5
ESE							0	0.0	
SE							0	0.0	
SSE		18.1					2	18.1	3.6
S							0	0.0	
SSW			9.0				1	9.0	8.1
SW		9.0		9.0			2	18.0	7.7
WSW			9.0				1	9.0	9.5
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW		18.1					2	18.1	3.3
CALM							0	0.0	
COL. TOTALS	9.0	45.2	36.0	9.0			11		5.6

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		8.3					1	8.3	3.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3						1	8.3	2.2
S		8.3			8.3		2	16.6	10.4
SSW	8.3	16.6					3	24.9	4.2
SW	8.3						1	8.3	2.6
WSW				8.3			1	8.3	11.9
W		8.3					1	8.3	5.4
WNW			8.3				1	8.3	6.5
NW							0	0.0	
NNW	8.3						1	8.3	.7
CALM							0	0.0	
COL. TOTALS	33.2	41.5	8.3	8.3	8.3		12		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.8
NNE							0	0.0	
NE							0	0.0	
ENE		9.0					1	9.0	3.1
E							0	0.0	
ESE							0	0.0	
SE			9.0				1	9.0	6.8
SSE							0	0.0	
S	9.0						1	9.0	1.7
SSW							0	0.0	
SW		9.0	18.1				3	27.1	7.1
WSW		9.0					1	9.0	4.0
W				9.0			1	9.0	10.7
WNW	18.1						2	18.1	2.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.1	27.0	27.1	9.0			11		4.9

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1		11.1				2	22.2	4.0
S							0	0.0	
SSW	11.1	22.2					3	33.3	3.0
SW							0	0.0	
WSW				11.1			1	11.1	15.5
W		22.2					2	22.2	3.9
WNW		11.1					1	11.1	5.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	55.5	11.1	11.1			9		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0	9.0					2	18.0	2.4
ENE							0	0.0	
E		9.0					1	9.0	4.4
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	2.7
S							0	0.0	
SSW		9.0					1	9.0	4.5
SW		9.0					1	9.0	5.6
WSW		9.0		9.0	9.0		3	27.0	11.3
W			9.0				1	9.0	7.5
WNW							0	0.0	
NW	9.0						1	9.0	.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	45.0	9.0	9.0	9.0		11		5.8

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			12.5				1	12.5	6.4
S		12.5					1	12.5	5.3
SSW							0	0.0	
SW		25.0					2	25.0	4.5
WSW			12.5				1	12.5	7.4
W		12.5					1	12.5	4.9
WNW			12.5				1	12.5	6.3
NW		12.5					1	12.5	3.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		62.5	37.5				8		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	1.8
NE	10.0						1	10.0	1.5
ENE		10.0					1	10.0	3.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		10.0					1	10.0	5.7
S							0	0.0	
SSW		10.0					1	10.0	4.4
SW							0	0.0	
WSW							0	0.0	
W			10.0	10.0	10.0		3	30.0	12.9
WNW		10.0					1	10.0	3.1
NW		10.0					1	10.0	5.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	50.0	10.0	10.0	10.0		10		6.4

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				12.5			1	12.5	12.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0					2	25.0	3.3
SW							0	0.0	
WSW					12.5		1	12.5	17.7
W		12.5	25.0	12.5			4	50.0	7.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		37.5	25.0	25.0	12.5		8		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		16.6					1	16.6	3.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	16.6						1	16.6	2.9
W	33.3						2	33.3	2.5
WNW							0	0.0	
NW		16.6					1	16.6	5.0
NNW				16.6			1	16.6	14.1
CALM							0	0.0	
COL. TOTALS	49.9	33.2		16.6			6		5.0

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		33.3	33.3				2	66.6	6.3
WNW							0	0.0	
NW			33.3				1	33.3	6.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	66.6				3		6.4

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF MARCH 1979 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	14.8		3.7	14.8		7.4		3.7		3.7		48.1
101-250	11.1	3.7		7.4	3.7			7.4	7.4			40.7
251-500	7.4											7.4
501-750												
TOTAL	33.3	3.7	3.7	22.2	3.7	7.4		11.1	7.4	3.7		
NO INVERSION												3.0
								TOTAL NO. OF OCCURENCES				26

INVERSION TYPE												
1				3.8	3.8			11.5	3.8			22.9
2			3.8	7.6		3.8						15.2
3	23.0	3.8		11.5		3.8			3.8	3.8		49.7
4	11.5											11.5
5												

MONTH OF MARCH 1979 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				13.3	6.6	6.6				6.6		33.1
101-250					6.6			20.0	6.6			33.2
251-500												
501-750												
TOTAL				13.3	13.2	6.6		20.0	6.6	6.6		
NO INVERSION												33.0
								TOTAL NO. OF OCCURENCES				10

INVERSION TYPE												
1					10.0			20.0				30.0
2					10.0	10.0		10.0				30.0
3				20.0					10.0	10.0		40.0
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MARCH 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	5	1
251- 500	1	1
501- 750	1	4
751-1000	0	1
1001-1500	0	0
>1500	0	3
TOTAL	11	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.2	4.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.60	-01.45

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

SURFACE WINDS MORNING APRIL.1979

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		9.0					1	9.0	5.1
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	.6
SE	18.1	9.0					3	27.1	2.1
SSE		9.0					1	9.0	3.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	9.0						1	9.0	.7
WNW	9.0						1	9.0	.4
NW	18.1						2	18.1	1.2
NNW	9.0						1	9.0	.9
CALM							0	0.0	
COL. TOTALS	72.2	27.0					11		1.6

SURFACE WINDS AFTERNOON APRIL.1979

DIRECTION	******** WIND SPEEDS METERS/SECOND ******** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.6						1	7.6	2.7
NNE							0	0.0	
NE			7.6				1	7.6	6.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	7.6						1	7.6	1.1
SSE		23.0					3	23.0	3.9
S	15.3	15.3					4	30.6	2.6
SSW	7.6						1	7.6	1.3
SW			7.6				1	7.6	6.6
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	7.6						1	7.6	2.5
CALM							0	0.0	
COL. TOTALS	45.7	38.3	15.2				13		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

100 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	.5
NNE	9.0	18.1					3	27.1	3.4
NE		9.0					1	9.0	3.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0	9.0		9.0			3	27.0	6.4
S							0	0.0	
SSW	9.0						1	9.0	2.6
SW							0	0.0	
WSW							0	0.0	
W	18.1						2	18.1	1.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	54.1	36.1		9.0			11		3.4

100 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			7.6				1	7.6	7.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	15.3						2	15.3	1.3
SSE	7.6	23.0					4	30.6	4.1
S							0	0.0	
SSW	7.6	7.6	7.6				3	22.8	3.9
SW							0	0.0	
WSW		7.6					1	7.6	5.0
W							0	0.0	
WNW	7.6						1	7.6	1.5
NW							0	0.0	
NNW	7.6						1	7.6	2.5
CALM							0	0.0	
COL. TOTALS	45.7	38.2	15.2				13		3.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

200 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		9.0	9.0		9.0		3	27.0	9.8
NE	9.0						1	9.0	2.8
ENE							0	0.0	
E							0	0.0	
ESE	18.1						2	18.1	2.3
SE							0	0.0	
SSE		9.0					1	9.0	4.5
S	9.0	9.0	9.0				3	27.0	4.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	9.0						1	9.0	2.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	27.0	18.0		9.0		11		5.0

200 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			7.6				1	7.6	7.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	7.6	15.3	7.6	7.6			5	38.1	6.6
S							0	0.0	
SSW			15.3				2	15.3	7.6
SW							0	0.0	
WSW	7.6	7.6					2	15.2	3.3
W							0	0.0	
WNW	7.6						1	7.6	1.1
NW	7.6	7.6					2	15.2	3.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.4	30.5	30.5	7.6			13		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

300 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		9.0					1	9.0	4.2
NE			9.0				1	9.0	6.9
ENE							0	0.0	
E							0	0.0	
ESE	27.2	9.0					4	36.2	2.3
SE			9.0				1	9.0	6.3
SSE							0	0.0	
S	9.0						1	9.0	2.1
SSW		9.0	9.0				2	18.0	6.4
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		9.0					1	9.0	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.2	36.0	27.0				11		4.0

300 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		7.6					1	7.6	4.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	7.6	30.7					5	38.3	3.7
S				7.6			1	7.6	13.6
SSW		7.6					1	7.6	3.5
SW	7.6						1	7.6	2.1
WSW	7.6	7.6					2	15.2	3.3
W							0	0.0	
WNW							0	0.0	
NW	7.6						1	7.6	1.1
NNW	7.6						1	7.6	2.4
CALM							0	0.0	
COL. TOTALS	38.0	53.5		7.6			13		

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

500 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.0
NNE		10.0					1	10.0	5.0
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	2.1
ESE							0	0.0	
SE		10.0					1	10.0	5.6
SSE		10.0		10.0			2	20.0	7.8
S			10.0				1	10.0	6.0
SSW							0	0.0	
SW		10.0	10.0				2	20.0	4.0
WSW							0	0.0	
W							0	0.0	
WNW		10.0					1	10.0	4.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	50.0	20.0	10.0			10		4.6

500 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	6.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	18.1	9.0					3	27.1	2.7
SE			9.0				1	9.0	6.8
SSE	9.0						1	9.0	1.6
S	9.0						1	9.0	2.4
SSW							0	0.0	
SW	18.1		9.0				3	27.1	3.6
WSW							0	0.0	
W	9.0						1	9.0	1.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	63.2	9.0	27.0				11		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

750 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.3
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	2.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		20.0	10.0				3	30.0	5.3
SW				10.0			1	10.0	11.0
WSW			10.0				1	10.0	7.4
W	10.0						1	10.0	1.2
WNW							0	0.0	
NW			10.0				1	10.0	6.5
NNW		10.0					1	10.0	4.5
CALM							0	0.0	
COL. TOTALS	30.0	30.0	30.0	10.0			10		4.9

750 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.3
ENE							0	0.0	
E			9.0				1	9.0	6.2
ESE	18.1						2	18.1	2.5
SE							0	0.0	
SSE	9.0				9.0		2	18.0	10.7
S							0	0.0	
SSW							0	0.0	
SW		9.0			9.0		2	18.0	10.1
WSW		18.1					2	18.1	4.0
W	9.0						1	9.0	.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.1	27.1	9.0		18.0		11		5.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			10.0				1	10.0	7.4
SE							0	0.0	
SSE	10.0						1	10.0	.4
S		10.0					1	10.0	4.6
SSW			20.0				2	20.0	7.5
SW							0	0.0	
WSW			10.0				1	10.0	9.3
W			10.0	10.0			2	20.0	10.4
WNW							0	0.0	
NW			10.0				1	10.0	7.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	10.0	60.0	10.0			10		6.6

1000 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********								
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		11.1					1	11.1	3.8
ENE							0	0.0	
E							0	0.0	
ESE			11.1				1	11.1	7.8
SE		11.1					1	11.1	5.1
SSE						11.1	1	11.1	26.1
S							0	0.0	*
SSW	11.1						1	11.1	2.8
SW				11.1			1	11.1	14.6
WSW							0	0.0	
W		22.2					2	22.2	5.6
WNW	11.1						1	11.1	1.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	44.4	11.1	11.1		11.1	9		8.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

1500 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.2
ENE							0	0.0	
E				11.1			1	11.1	13.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			22.2				2	22.2	7.8
WSW							0	0.0	
W		11.1					1	11.1	5.1
WNW			11.1	22.2			3	33.3	11.2
NW							0	0.0	
NNW		11.1					1	11.1	3.3
CALM							0	0.0	
COL. TOTALS	11.1	22.2	33.3	33.3			9		8.1

1500 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	12.5						1	12.5	2.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			12.5				1	12.5	9.9
SE							0	0.0	
SSE						12.5	1	12.5	26.3
S			12.5				1	12.5	8.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	12.5						1	12.5	2.3
WNW	12.5	12.5					2	25.0	3.9
NW			12.5				1	12.5	6.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	37.5	12.5	37.5			12.5	8		7.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

4000 METER LEVEL WINDS MORNING APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE				12.5			1	12.5	11.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			12.5				1	12.5	7.5
WNW			25.0	12.5			3	37.5	9.1
NW				12.5			1	12.5	10.1
NNW		12.5	12.5				2	25.0	4.6
CALM							0	0.0	
COL. TOTALS		12.5	50.0	37.5			8		8.2

4000 METER LEVEL WINDS AFTERNOON APRIL.1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			33.3	33.3			2	66.6	10.4
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			33.3				1	33.3	6.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			66.6	33.3			3		9.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MONTH OF APRIL 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	4.1		12.5	8.3		4.1		4.1		4.1		37.2
101-250	20.8			12.5		4.1	4.1		4.1			45.6
251-500	8.3		4.1									12.4
501-750												
TOTAL	33.2		16.6	20.8		8.2	4.1	4.1	4.1	4.1		
NO INVERSION												4.0
								TOTAL NO. OF OCCURENCES				23

INVERSION TYPE											
1				8.6		4.3	4.3		4.3		21.5
2	8.6		17.3	4.3		4.3		4.3			38.8
3	17.3			8.6						4.3	30.2
4	8.6										8.6
5											

MONTH OF APRIL 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100				10.0	10.0			20.0				40.0
101-250				10.0					10.0			20.0
251-500												
501-750												
TOTAL				20.0	10.0			20.0	10.0			
NO INVERSION												40.0
								TOTAL NO. OF OCCURENCES				6

INVERSION TYPE											
1								16.6			16.6
2				16.6	16.6			16.6	16.6		66.4
3											
4				16.6							16.6
5											

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: FLATHEAD CO - AIRPORT - FLATHEAD STUDY MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR APRIL 1979

XING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	1	0
251- 500	3	1
501- 750	0	0
751-1000	1	1
1001-1500	1	2
>1500	1	4
TOTAL	12	8

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.3	5.2
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.74	-01.42

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF JULY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	23	0	0	0	0	0	0	0	0	0	24
---TIME 601-1200 MST											
001-100	1	1	5	9	1	0	0	0	0	0	17
101-300	2	0	0	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	3	1	5	9	1	0	0	0	0	0	24
---TIME 1201-1800 MST											
001-100	0	0	0	1	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	0	0	0	1	1	0	0	0	0	0	26
---TIME 1801-2400 MST											
001-100	17	0	0	0	0	0	0	0	0	0	17
101-300	8	0	0	0	0	0	0	0	0	0	8
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											0
TOTAL	25	0	0	0	0	0	0	0	0	0	25
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	21	1	5	10	2	0	0	0	0	0	39
101-300	26	0	0	0	0	0	0	0	0	0	26
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	51	1	5	10	2	0	0	0	0	0	99

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF JULY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	2	1	0	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											21
TOTAL	0	0	0	2	1	0	0	0	0	0	24
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	0	0	0	0	0	0	0	0	0	0	24
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	0	0	0	0	0	0	0	0	26
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	0	0	0	0	0	0	0	25
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	2	1	0	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											96
TOTAL	0	0	0	2	1	0	0	0	0	0	99

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF JULY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	E	E	E	E
4	E	E	E	D	E	B	C	D	D	E	D	D
5	D	D	D	E	D	D	D	D	C	D	E	E
6	F	F	F	D	C	B	C	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	C	C	C	C	F	F
11	F	F	F	D	C	C	D	D	D	D	E	E
12	F	F	F	D	C	C	C	C	C	D	F	F
13	F	F	F	D	C	C	C	C	D	D	F	F
14	F	F	F	D	C	C	C	C	C	C	F	F
15	F	F	F	D	B	A	C	D	D	D	E	E
16	D	D	D	C	D	C	D	C	D	D	E	D
17	D	D	D	D	D	D	D	D	D	D	E	E
18	F	E	E	E	D	D	U	D	D	D	E	E
19	E	E	E	D	C	C	C	B	B	D	F	F
20	F	E	D	D	C	C	C	C	D	D	F	F
21	F	F	F	D	C	C	C	C	C	D	E	E
22	E	E	E	D	C	C	C	C	C	D	F	F
23	F	F	F	D	C	B	C	D	D	E	F	F
24	F	F	F	D	C	C	C	C	D	U	F	F
25	F	F	F	D	C	C	C	C	D	F	F	F
26	F	F	F	D	C	C	C	C	D	D	E	D
27	D	D	D	U	C	C	C	C	C	D	F	F
28	F	F	F	D	B	B	C	C	D	D	E	E
29	F	F	F	D	C	C	C	C	D	D	F	F
30	F	F	F	D	C	C	C	C	D	E	E	E
31	E	F	D	C	C	C	C	C	D	D	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.3 % B= 2.4 % C=21.5 % D=23.7 % E=11.3 % F=18.8 %

U= 0.8 % M=21.2 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF AUGUST 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	3	0	0	1	0	0	0	0	0	0	4
101-300	17	0	0	0	0	0	0	0	0	0	17
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	26	0	0	1	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	2	1	2	3	0	0	0	0	0	0	8
101-300	0	1	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											19
TOTAL	2	2	2	3	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	11	0	0	0	0	0	0	0	0	0	11
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	22	0	0	0	0	0	0	0	0	0	27
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	16	1	2	4	0	0	0	0	0	0	23
101-300	28	1	0	0	0	0	0	0	0	0	29
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											53
TOTAL	50	2	2	4	0	0	0	0	0	0	111

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF AUGUST 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	2	1	0	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	2	1	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	1	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	1	0	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	1	0	1	0	0	0	0	0	27
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	3	2	0	0	0	0	0	6
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											05
TOTAL	0	0	1	3	2	0	0	0	0	0	11

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF AUGUST 1978

********* TWO HOUR STABILITY ANALYSIS **********

	HOUR											
DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	D	C	C	D	D	E	E	E	E
2	E	E	E	D	C	C	C	B	C	D	F	F
3	F	F	F	D	B	B	C	C	C	D	D	F
4	F	F	F	D	C	C	C	C	D	F	F	F
5	F	E	E	D	C	C	C	C	D	E	F	F
6	F	F	F	D	C	C	C	D	U	U	D	F
7	F	F	F	D	C	C	C	C	C	D	F	F
8	F	F	F	D	C	C	C	C	C	D	F	F
9	F	F	F	D	C	C	C	C	D	D	E	D
10	F	F	F	F	D	C	C	C	D	E	E	E
11	F	F	F	D	C	C	C	C	D	D	F	F
12	F	F	F	D	C	C	D	D	D	D	D	E
13	D	D	E	D	C	C	D	D	D	D	E	E
14	E	E	E	D	C	C	C	C	D	D	D	D
15	D	D	D	U	D	D	D	D	D	E	D	D
16	D	D	D	D	C	D	D	D	C	D	E	D
17	D	D	D	D	D	D	C	C	D	D	E	D
18	E	E	E	E	D	C	D	C	D	E	E	E
19	E	E	E	D	D	C	C	D	E	D	E	E
20	E	E	D	D	D	D	D	D	D	D	D	D
21	D	D	D	D	C	D	C	C	C	D	E	E
22	E	E	E	D	D	D	D	D	D	E	D	D
23	D	D	E	D	C	C	C	D	C	D	F	F
24	F	F	F	D	C	C	C	C	D	D	F	F
25	F	E	E	E	D	C	C	C	D	D	F	F
26	F	E	E	D	C	C	C	C	D	D	F	F
27	F	F	F	D	C	C	C	C	D	F	F	F
28	F	F	F	D	B	B	C	M	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M
31	M	M	M	M	M	M	M	M	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.3 % C=21.8 % D=32.8 % E=14.5 % F=17.7 %

U= 0.8 % M=11.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF OCTOBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	18	0	0	0	0	0	0	0	0	0	19
---TIME 601-1200 MST											
001-100	1	0	0	1	0	0	0	0	0	0	2
101-300	7	0	0	0	0	0	0	0	0	0	7
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	14	0	0	1	0	0	0	0	0	0	19
---TIME 1201-1800 MST											
001-100	0	0	0	3	2	0	0	0	0	0	5
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											15
TOTAL	0	0	0	3	2	0	0	0	0	0	20
---TIME 1801-2400 MST											
001-100	4	0	0	0	0	0	0	0	0	0	4
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											0
TOTAL	20	0	0	0	0	0	0	0	0	0	20
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	6	0	0	4	2	0	0	0	0	0	12
101-300	32	0	0	0	0	0	0	0	0	0	32
301-500	14	0	0	0	0	0	0	0	0	0	14
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											20
TOTAL	52	0	0	4	2	0	0	0	0	0	78

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF OCTOBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	2	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											17
TOTAL	0	0	0	0	2	0	0	0	0	0	19
---TIME 601-1200 MST											
001-100	0	0	0	0	2	0	1	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											16
TOTAL	0	0	0	0	2	0	1	0	0	0	19
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											20
TOTAL	0	0	0	0	0	0	0	0	0	0	20
---TIME 1801-2400 MST											
001-100	0	0	0	1	3	0	0	0	0	0	4
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											16
TOTAL	0	0	0	1	3	0	0	0	0	0	20
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	7	0	1	0	0	0	9
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											69
TOTAL	0	0	0	1	7	0	1	0	0	0	78

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY — MONTH OF OCTOBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	C	C	D	F	F	F
13	F	F	F	E	D	B	C	C	D	F	F	F
14	F	F	F	F	D	B	C	C	D	F	F	F
15	F	F	F	D	C	C	C	C	D	E	E	
16	E	E	E	E	D	B	C	C	D	D	E	E
17	E	E	E	E	D	B	C	C	D	F	F	F
18	F	F	F	F	D	C	C	C	D	F	F	F
19	F	F	F	F	D	B	C	C	D	F	F	F
20	F	E	E	E	D	B	C	C	D	D	F	F
21	E	D	E	D	D	D	D	D	D	E	F	F
22	F	F	F	F	D	B	C	C	D	E	E	E
23	E	E	E	E	D	C	C	D	E	E	E	E
24	D	D	D	D	D	D	D	D	E	F	F	F
25	F	E	E	E	D	E	C	C	E	F	F	F
26	F	F	F	F	D	E	C	C	E	E	F	F
27	E	E	D	D	D	D	D	D	D	E	E	D
28	D	E	E	D	B	B	C	D	E	E	E	E
29	E	D	D	D	D	D	D	D	U	E	E	E
30	E	E	E	E	D	C	C	B	D	E	F	F
31	F	F	F	E	D	C	C	C	D	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 3.2 % C= 9.4 % D=16.7 % E=15.6 % F=17.7 %

U= 0.3 % M=37.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY — MONTH OF NOVEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	15	0	0	0	0	0	0	0	0	0	15
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	19	0	1	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	1	0	0	0	0	1	0	0	0	0	2
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	17	0	0	0	0	1	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	1	0	0	0	2	0	0	0	0	0	3
101-300	7	0	0	0	0	0	0	0	0	0	7
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											20
TOTAL	8	0	0	0	2	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	7	0	1	0	0	0	0	0	0	0	8
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	25	0	1	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	9	0	2	0	2	1	0	0	0	0	14
101-300	53	0	0	0	0	0	0	0	0	0	53
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											46
TOTAL	69	0	2	0	2	1	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF NOVEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	2	1	1	0	0	0	0	4
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	0	2	1	1	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	1	1	1	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	1	1	1	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	1	0	1	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	1	0	1	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	4	1	0	0	0	0	5
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	0	0	0	0	4	1	0	0	0	0	30
FREQUENCY SUMMARY FOR SECOND INVERSION											
001-100	0	0	0	4	6	4	0	0	0	0	14
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											106
TOTAL	0	0	0	4	6	4	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF NOVEMBER 1978

********* TWO HOUR STABILITY ANALYSIS *********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	F	F	F	D	D	C	B	B	D	F	F	F
2	F	F	F	F	C	B	B	D	D	E	E	E
3	D	D	D	D	D	D	D	E	D	D	D	D
4	D	D	D	D	C	C	D	D	D	E	F	F
5	F	F	F	F	D	C	C	D	D	E	E	E
6	E	E	E	E	D	C	C	D	E	E	E	E
7	E	E	E	E	D	D	D	D	E	E	D	D
8	D	D	D	E	D	D	D	D	D	E	D	E
9	D	D	D	D	D	D	D	D	D	D	D	D
10	D	D	D	D	D	C	C	C	E	E	E	E
11	F	E	E	F	D	C	C	C	D	D	F	F
12	F	E	E	D	D	D	D	D	D	D	E	D
13	D	D	D	D	D	B	C	C	F	E	E	E
14	E	E	E	E	D	B	C	C	D	F	F	F
15	F	F	F	E	C	B	C	B	D	E	E	E
16	E	D	E	D	D	D	D	D	D	E	E	E
17	D	D	D	D	D	D	D	D	D	D	D	D
18	D	D	D	D	D	D	D	D	D	D	D	D
19	D	D	D	D	D	D	D	D	D	D	D	D
20	D	D	D	D	C	C	C	D	D	E	E	E
21	E	F	F	F	D	C	B	B	D	F	F	F
22	F	E	D	D	D	D	D	D	D	D	D	D
23	E	E	D	D	D	E	E	E	E	E	E	E
24	E	E	E	E	D	D	E	D	D	D	D	D
25	D	D	D	E	E	D	B	D	E	E	E	E
26	E	E	D	D	D	D	B	D	C	E	E	E
27	E	E	E	C	D	D	C	C	E	E	D	D
28	D	D	D	D	D	D	E	E	E	E	E	E
29	E	E	E	E	E	E	E	E	E	E	E	E
30	E	E	D	D	D	D	D	D	D	D	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 3.3 % C= 5.3 % D=52.5 % E=29.2 % F= 9.7 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY — MONTH OF DECEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	9	0	0	1	0	0	0	0	0	0	10
101-300	17	0	0	0	0	0	0	0	0	0	17
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	26	0	0	1	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	7	0	0	1	1	0	0	0	0	0	9
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	23	0	0	1	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	4	3	2	1	1	0	0	0	0	0	11
101-300	4	1	1	0	0	0	0	0	0	0	6
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	9	4	3	1	1	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	13	0	0	0	0	0	0	0	0	0	13
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	29	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	33	3	2	3	2	0	0	0	0	0	43
101-300	51	1	1	0	0	0	0	0	0	0	53
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	87	4	3	3	2	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY — MONTH OF DECEMBER 1978

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	2	1	0	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	2	1	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	1	1	0	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	1	1	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	1	1	0	0	0	0	0	2
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	2	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	4	2	0	0	0	0	0	7
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											116
TOTAL	0	0	1	5	2	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF DECEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	D	D	D	D	C	C	E	E
2	E	E	D	D	D	D	D	D	D	D	D	D
3	D	D	D	D	D	D	D	D	D	D	E	D
4	D	D	D	D	D	D	D	C	E	E	E	E
5	F	E	E	E	E	E	E	E	E	E	E	E
6	E	E	E	E	E	D	C	C	D	F	F	F
7	F	E	E	E	E	D	D	D	D	D	E	D
8	D	D	D	D	D	D	D	D	D	D	D	D
9	D	D	D	D	D	D	D	D	D	D	D	D
10	D	D	E	E	E	D	B	C	E	E	E	D
11	D	D	D	D	E	D	D	D	D	E	E	E
12	E	D	D	E	D	D	D	D	F	F	D	F
13	F	F	F	F	F	D	D	C	E	E	E	E
14	E	E	E	D	D	D	D	D	E	E	F	F
15	E	D	D	D	D	D	D	F	F	F	E	E
16	E	E	E	E	E	D	D	D	D	E	E	E
17	E	E	E	E	E	E	D	D	D	E	E	E
18	D	D	D	D	D	D	D	D	D	D	E	D
19	D	D	D	D	D	E	D	D	E	D	D	D
20	E	E	D	D	D	D	D	D	E	E	D	D
21	D	D	D	D	D	D	D	E	E	E	E	E
22	D	D	D	D	D	D	D	D	E	E	E	E
23	E	F	F	E	E	D	D	D	D	E	D	D
24	D	D	D	D	D	D	D	D	E	E	F	F
25	F	F	F	E	F	F	D	D	D	E	F	F
26	F	E	E	E	E	D	D	D	E	D	D	D
27	D	D	D	D	D	D	D	D	D	D	D	D
28	D	D	D	D	D	D	D	D	D	D	D	D
29	E	F	F	F	D	D	B	B	B	F	F	D
30	D	D	D	D	D	D	D	D	D	D	D	D
31	E	E	E	F	E	E	D	D	D	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.1 % C= 1.9 % D=58.1 % E=28.5 % F=10.5 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF JANUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	16	1	1	0	0	0	0	0	0	0	18
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	24	1	1	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	3	0	1	0	0	0	0	0	0	0	4
101-300	8	2	0	0	0	0	0	0	0	0	10
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	23	2	1	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	1	1	1	2	0	0	0	0	0	0	5
101-300	7	2	3	1	0	0	0	0	0	0	13
301-500	5	1	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	13	4	4	3	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	5	0	0	1	1	0	0	0	0	0	7
101-300	14	0	1	0	0	0	0	0	0	0	15
301-500	5	0	0	0	0	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	24	0	1	1	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	10	1	2	3	1	0	0	0	0	0	17
101-300	45	5	5	1	0	0	0	0	0	0	56
301-500	29	1	0	0	0	0	0	0	0	0	30
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											21
TOTAL	84	7	7	4	1	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF JANUARY 1979

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	3	3	1	0	0	0	0	7
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	0	0	0	3	3	1	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	1	1	2	0	0	0	0	4
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	1	1	1	2	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	1	1	0	0	0	0	2
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	1	0	1	1	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	4	1	0	0	0	0	5
101-300	0	0	1	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	0	0	1	1	4	1	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	4	9	5	0	0	0	0	18
101-300	0	0	3	1	0	0	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											102
TOTAL	0	0	3	5	9	5	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF JANUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	F	F	F	F	E	E	E	E	E	E	E	E
2	E	D	D	D	D	D	D	C	C	F	F	F
3	F	F	F	E	E	D	D	C	C	E	E	E
4	E	E	E	F	F	D	D	C	F	F	F	F
5	E	F	F	E	E	E	F	D	C	F	F	F
6	F	F	F	F	F	F	F	C	C	E	E	E
7	E	E	E	E	F	F	F	F	F	F	F	F
8	F	D	D	D	D	D	D	D	F	F	F	F
9	F	E	E	E	D	D	D	E	C	C	C	C
10	D	C	D	C	D	E	D	C	C	C	C	C
11	C	D	D	D	D	D	M	M	E	C	C	C
12	D	C	D	D	D	D	D	C	E	C	C	C
13	C	D	D	D	D	D	D	M	M	M	M	M
14	M	M	M	M	E	E	E	E	E	C	C	C
15	C	D	D	D	D	D	E	D	E	F	C	C
16	C	D	D	D	D	D	D	C	C	E	C	C
17	D	D	D	D	D	D	F	F	F	F	F	F
18	E	E	D	D	D	D	D	C	F	E	E	E
19	D	D	D	D	D	D	D	C	C	C	C	C
20	C	C	D	D	D	D	D	C	C	C	E	D
21	C	D	D	D	D	D	D	C	C	E	E	E
22	E	F	F	F	E	E	F	E	C	C	C	E
23	E	E	E	E	E	D	D	C	E	E	E	E
24	D	D	D	D	D	D	F	E	E	E	E	E
25	E	F	F	F	D	F	D	C	C	E	E	E
26	E	E	E	E	E	D	D	M	M	M	M	M
27	D	D	D	D	D	D	M	D	C	E	C	F
28	E	E	E	E	E	E	D	C	D	C	C	E
29	C	D	D	D	D	D	D	C	C	C	C	C
30	C	E	D	E	E	D	C	L	C	C	E	E
31	E	E	E	E	E	E	E	E	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.3 % C= 0.0 % D=50.8 % E=28.2 % F=16.1 %

L= 0.0 % M= 4.5 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY — MONTH OF FEBRUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	1	1	0	0	0	0	0	0	2
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	10	0	1	1	0	0	0	0	0	0	13
---TIME 601-1200 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	11	0	1	0	0	0	0	0	0	0	13
---TIME 1201-1800 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	7	0	1	0	0	0	0	0	0	0	8
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											3
TOTAL	8	0	2	0	0	0	0	0	0	0	13
---TIME 1801-2400 MST											
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	8	0	0	0	0	0	0	0	0	0	8
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	12	0	0	0	0	0	0	0	0	0	13
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	3	0	3	1	0	0	0	0	0	0	7
101-300	33	0	1	0	0	0	0	0	0	0	34
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											6
TOTAL	41	0	4	1	0	0	0	0	0	0	52

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY — MONTH OF FEBRUARY 1979

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	0	0	0	0	1	0	0	0	0	0	13
---TIME 601-1200 MST											
001-100	0	0	0	1	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	0	0	0	1	1	0	0	0	0	0	13
---TIME 1201-1800 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											12
TOTAL	0	0	0	0	1	0	0	0	0	0	13
---TIME 1801-2400 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	0	0	1	1	0	0	0	0	0	0	13
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	2	3	0	0	0	0	0	5
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											46
TOTAL	0	0	1	2	3	0	0	0	0	0	52

ACOUSTIC RADAR ANALYSIS

FLATHEAD ENVIRONMENTAL STUDY MONTH OF FEBRUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

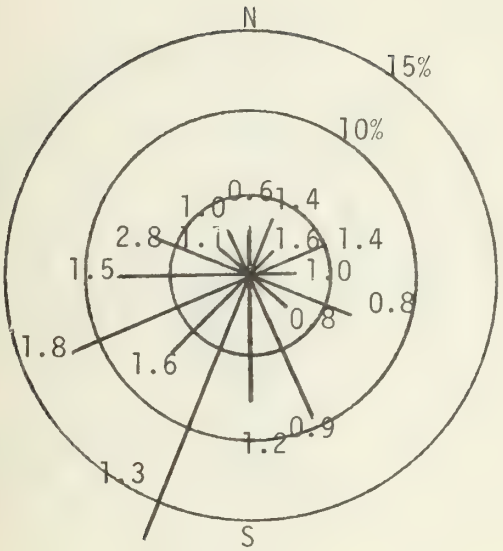
DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	E	D	D	F	F	E	E	E
2	D	D	D	D	D	E	D	D	D	D	D	D
3	D	D	D	D	D	D	D	D	D	D	D	D
4	D	D	D	D	D	D	D	E	D	D	D	E
5	D	D	D	D	D	D	D	D	E	E	E	E
6	E	E	E	E	D	D	D	D	D	E	D	D
7	D	D	D	F	D	D	D	D	E	F	F	F
8	F	F	F	F	E	D	D	D	D	E	D	D
9	D	D	D	D	D	E	D	D	D	D	D	D
10	D	E	E	E	D	D	D	D	D	D	D	D
11	D	D	E	E	E	E	E	D	D	E	D	D
12	D	D	D	D	D	D	D	E	E	D	D	D
13	D	D	D	D	D	D	E	E	E	E	E	M
14	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M
26	M	M	M	M	M	M	M	M	M	M	M	M
27	M	M	M	M	M	M	M	M	M	M	M	M
28	M	M	M	M	M	M	M	M	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

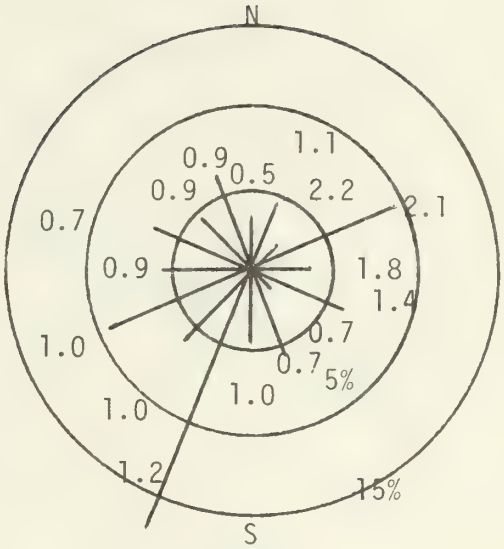
A= 0.0 % B= 0.0 % C= 0.0 % D=32.4 % E=10.7 % F= 3.0 %

U= 0.0 % M=53.9 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT KALISPELL
WIND DATA USED FROM NWS STATION AT KALISPELL

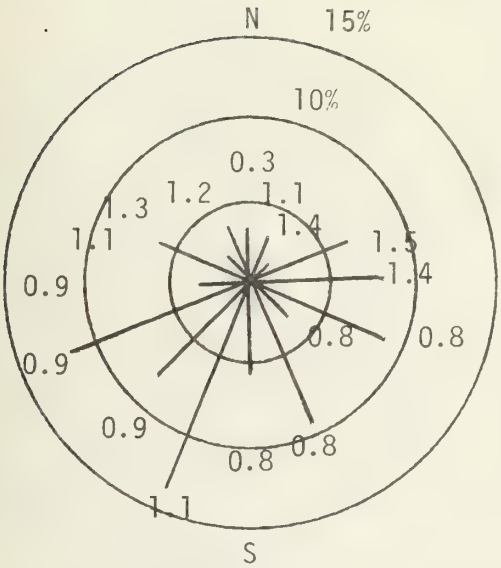


December 1977
Calm 0.0
Total hours 699

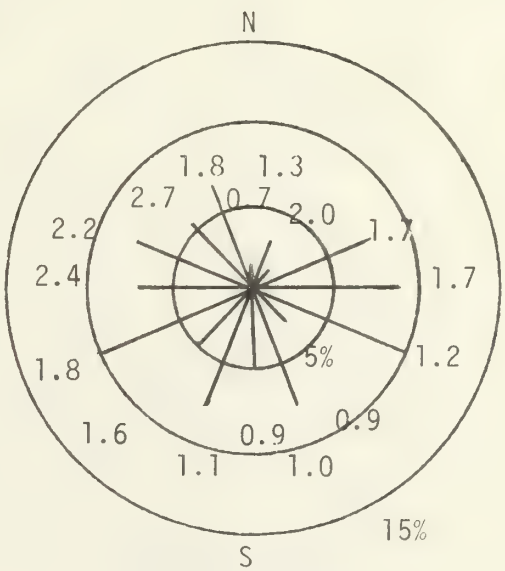


January 1978
Calm 1.5%
Total hours 657

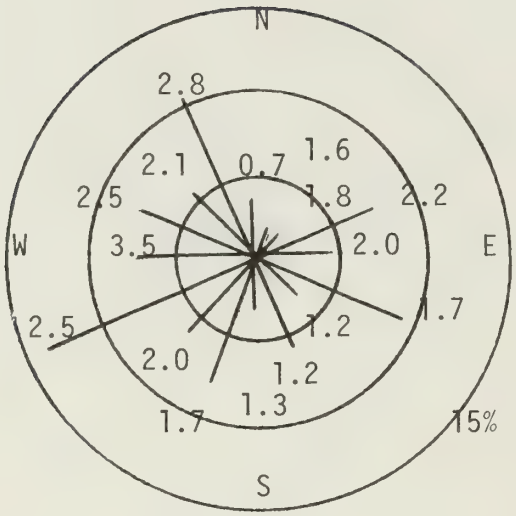
Monthly Wind Roses
Surface
Lion's Park Site
Missoula, Montana



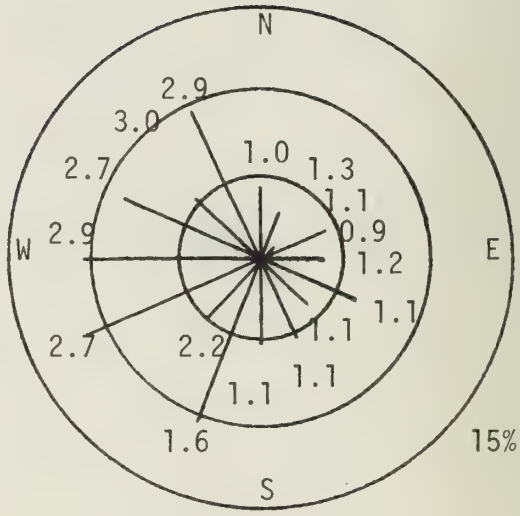
February 1978
calm 0.2%
Total hours 539



March 1978
calm 1.2%
Total hours 665

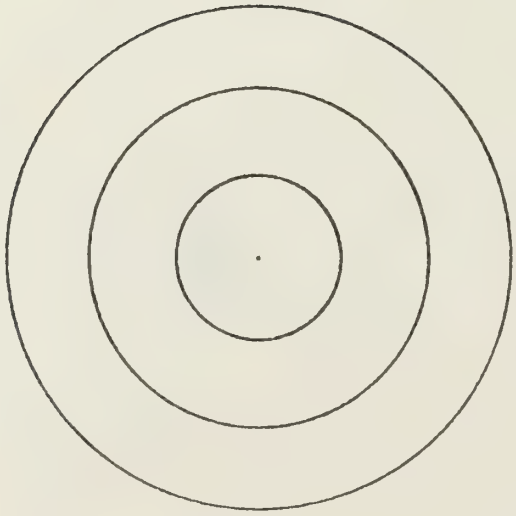


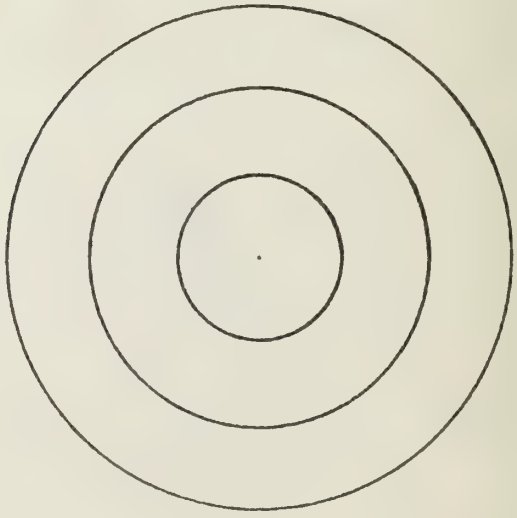
April 1978
Calm 0.0%
(Total Hours 670)



May 1978
Calm 0.0%
(Total Hours 675)

Figure
Monthly Wind Roses
Surface
Lion's Park Site
Missoula, Montana





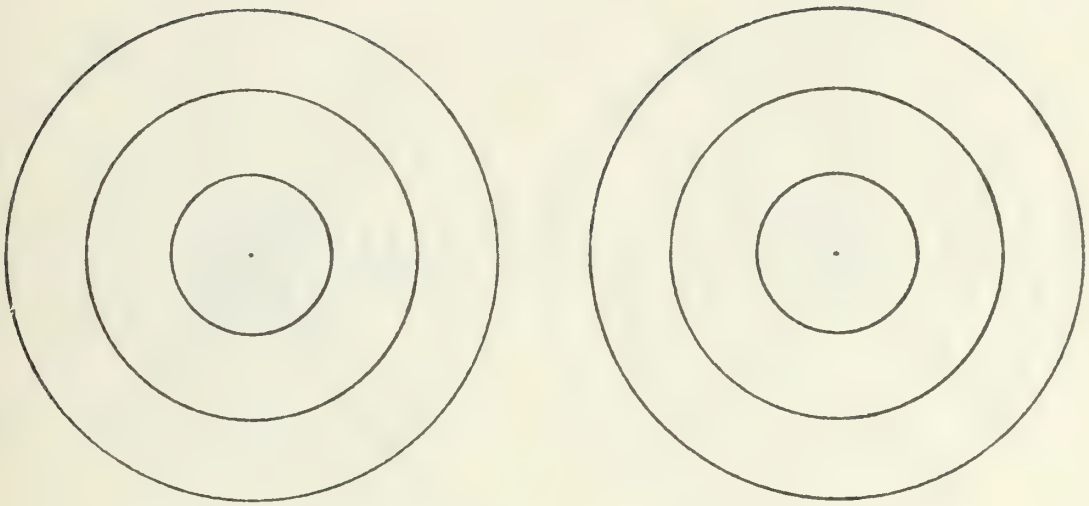
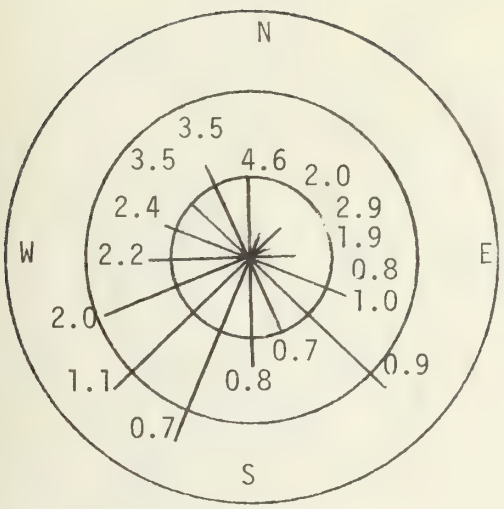
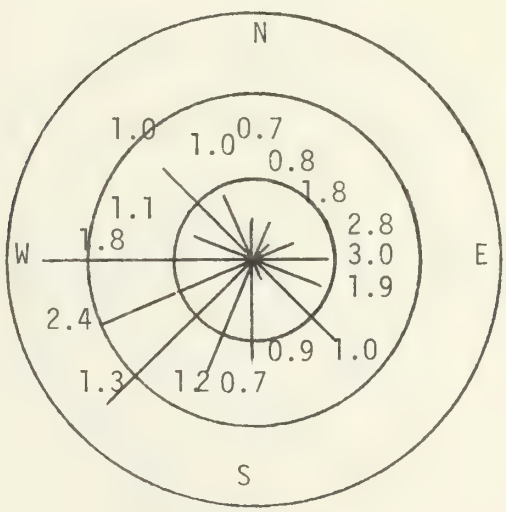


Figure
Monthly Wind Roses
Surface
Lion's Park Site
Missoula, Montana



October 1978
Calm 0.0%
(Total Hours 430)



November 1978
Calm 1.4%
(Total Hours 422)

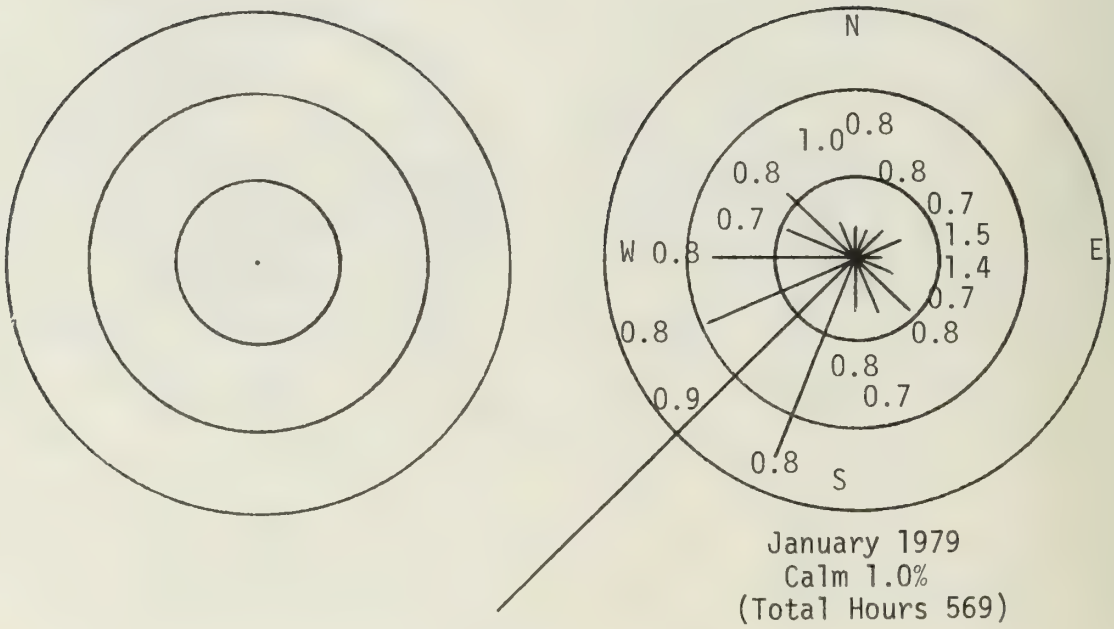
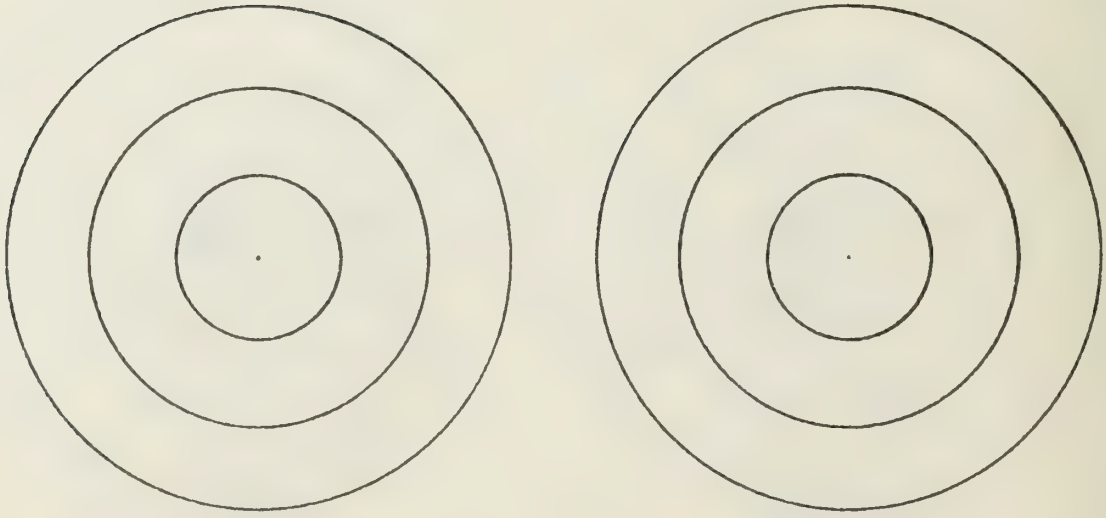
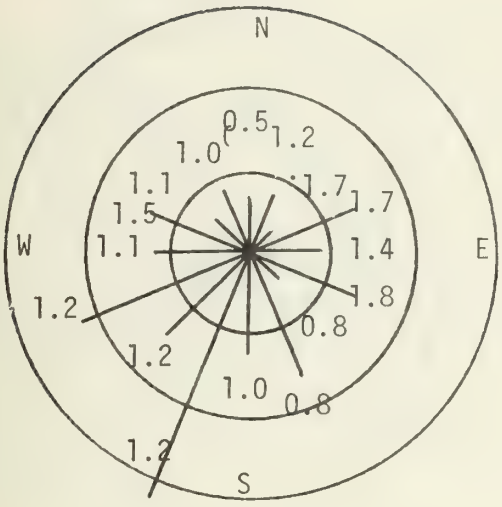
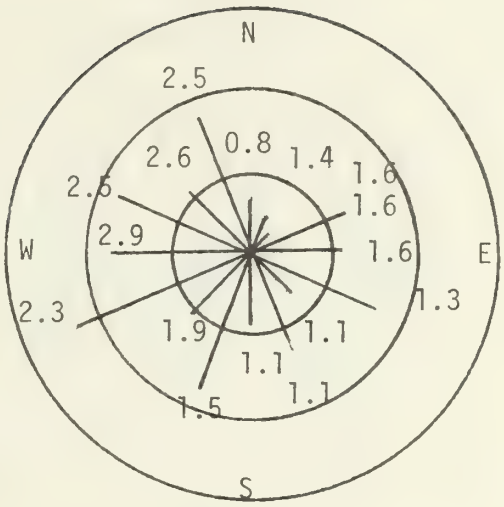


Figure
Monthly Wind Roses
Surface
Lion's Park
Missoula, Montana



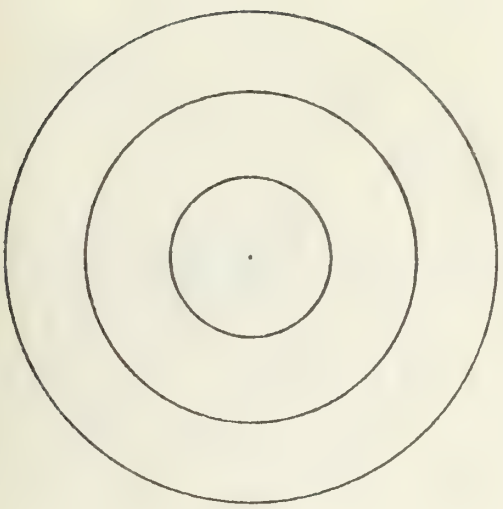


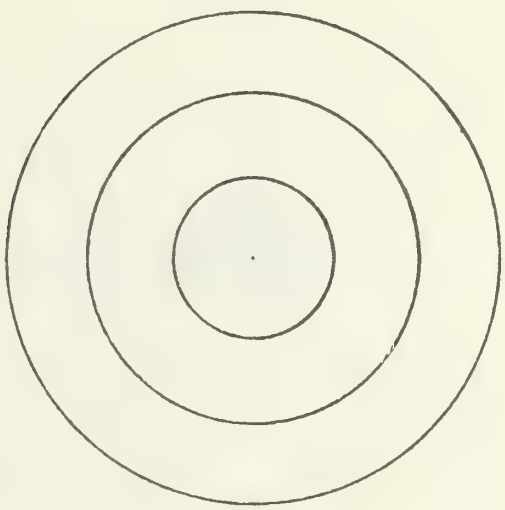
Winter 1977-1978
(Dec. 77, Jan. Feb. 78)
Calm 0.6
(Total Hours 1895)

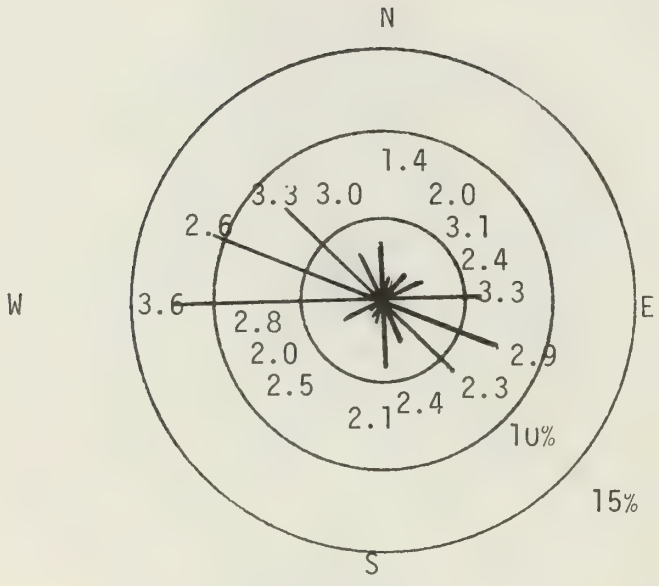


Spring 1978
(March, April, May)
Calm 0.4%
(Total Hours 2010)

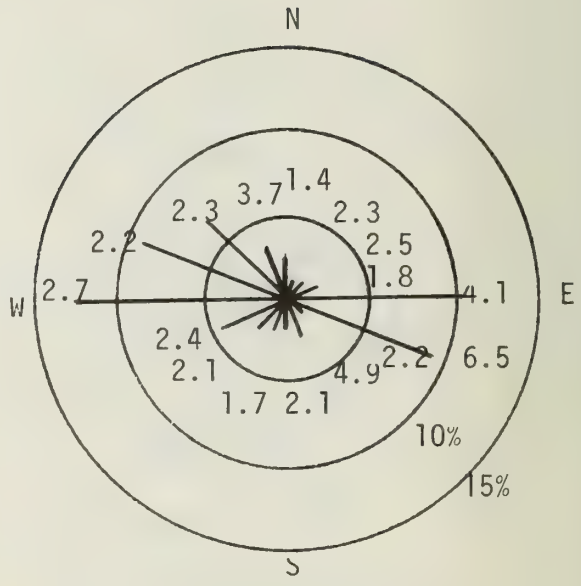
Figure
Seasonal Wind Roses
Surface
Lion's Park Site
Missoula, Montana





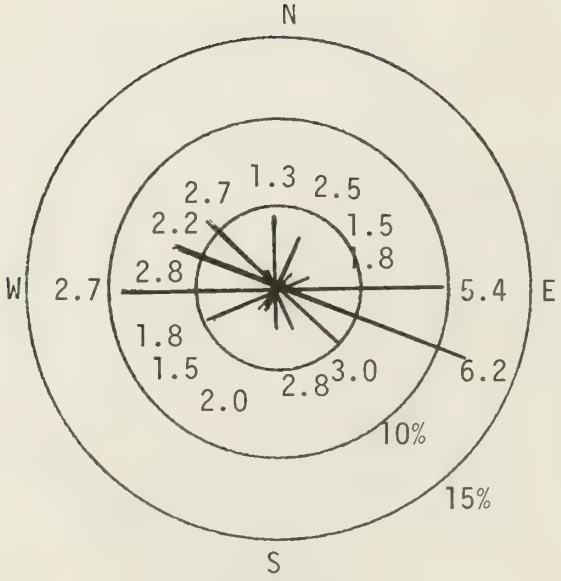


December 1977
Calm 27.0%
(Total hours 248)

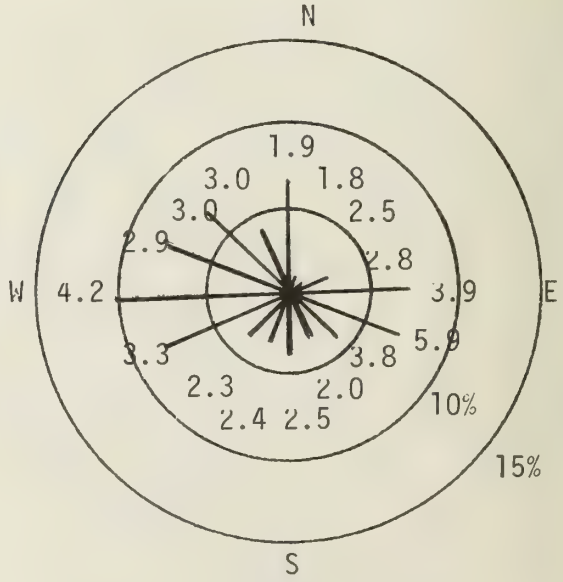


January 1978
Calm 27.8%
(Total hours 248)

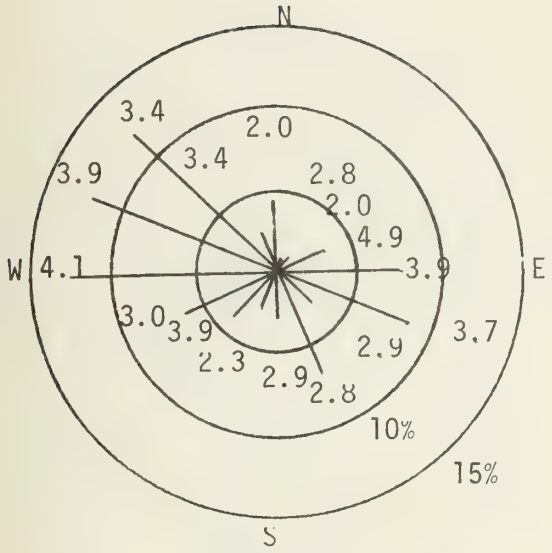
Figure
Monthly Wind Roses
National Weather Service
Missoula, Montana



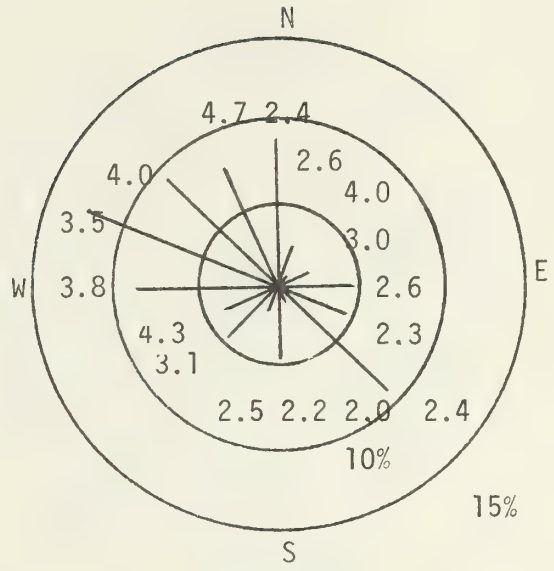
February 1978
Calm 29.5%
(Total hours 224)



March 1978
Calm 19.4%
(Total hours 248)

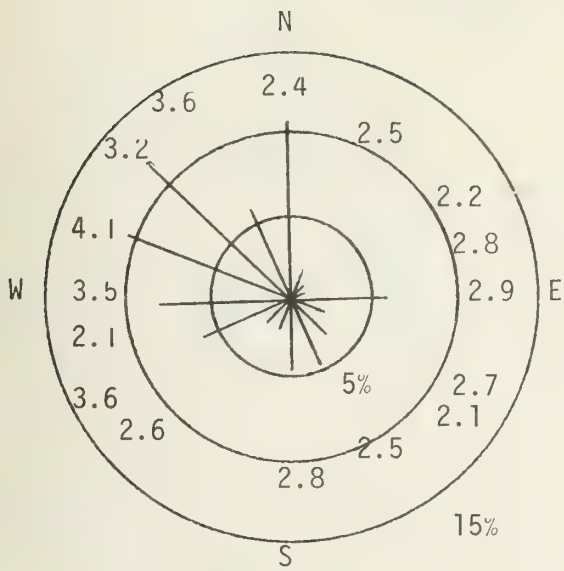


April 1978
Calm 9.6%
(Total hours 240)

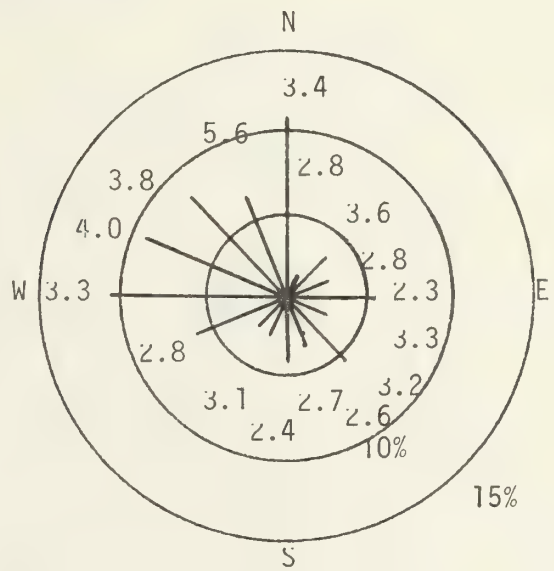


May 1978
Calm 12.5%
(Total hours 248)

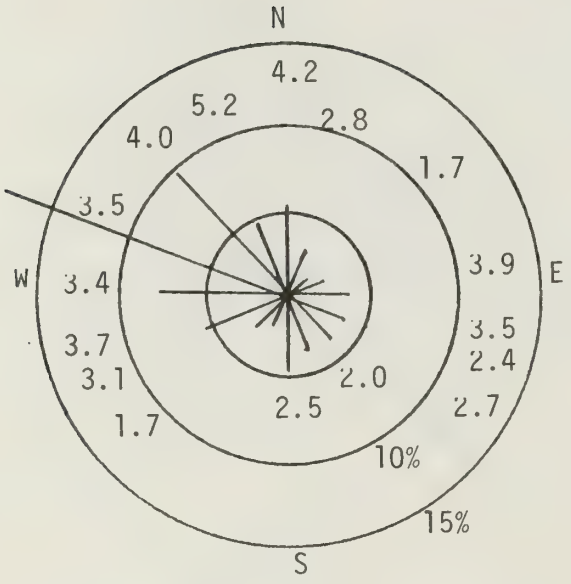
Figure
Monthly Wind Roses
National Weather Service
Missoula, Montana



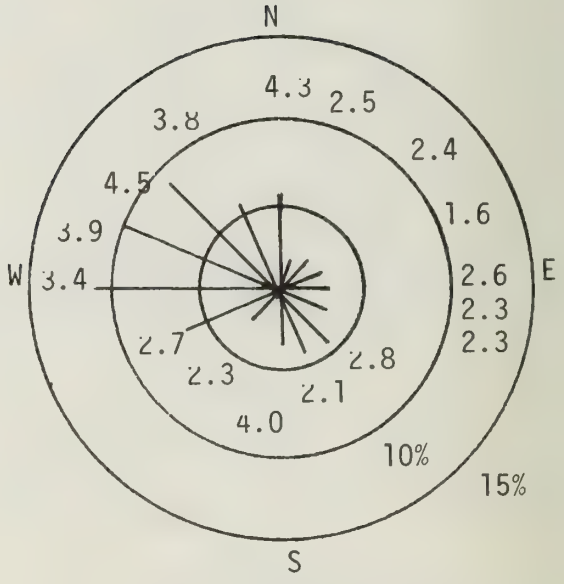
June 1978
Calm 14.6%
(Total hours 240)



July 1978
Calm 16.1%
(Total hours 248)

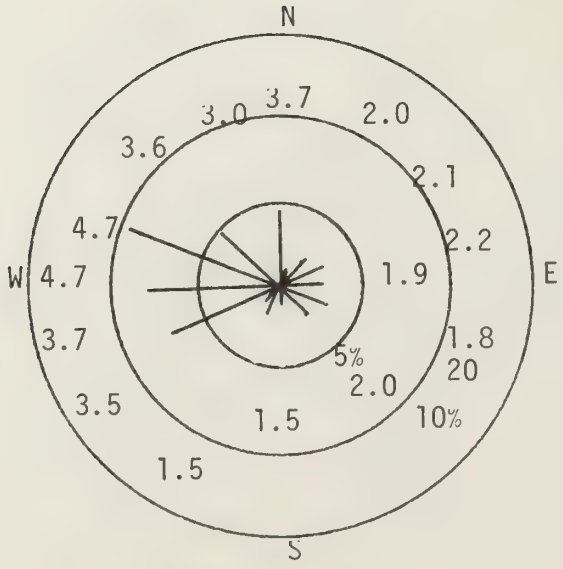


August 1978
Calm 19%
(Total hours 248)

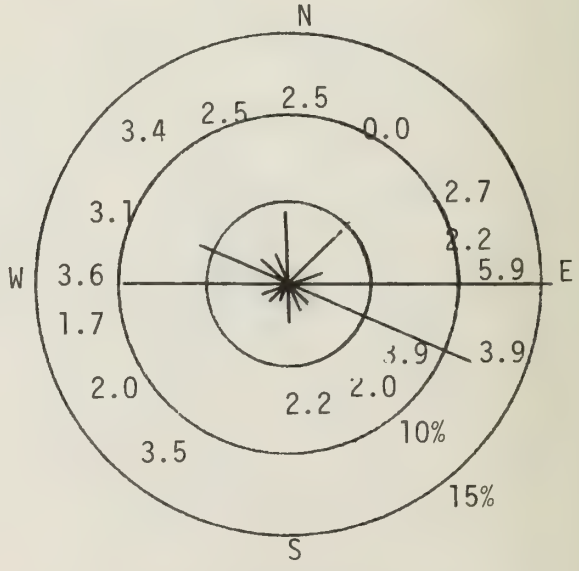


September 1978
Calm 21.2%
(Total hours 240)

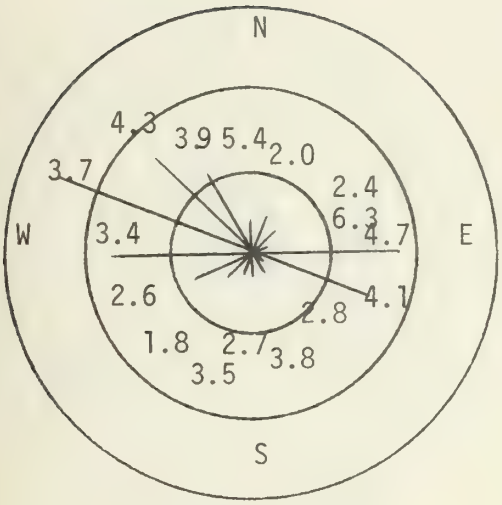
Figure
Monthly Wind Roses
National Weather Service
Missoula, Montana



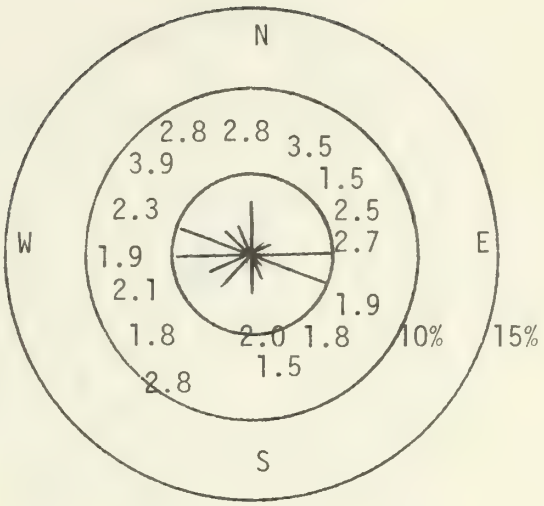
October 1978
Calm 35.9%
(Total hours 248)



November 1978
Calm 31.7%
(Total hours 248)

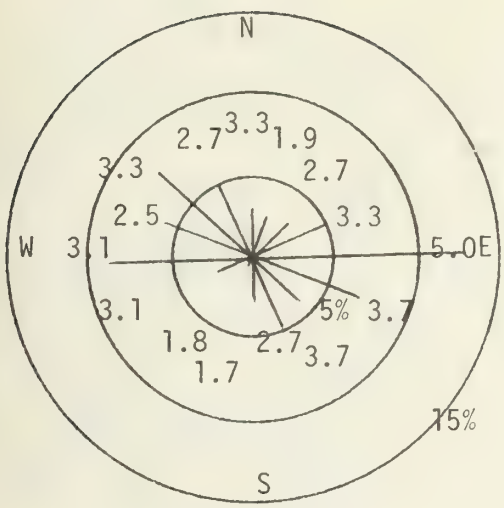


December 1978
Calm 29.8%
(Total hours 248)

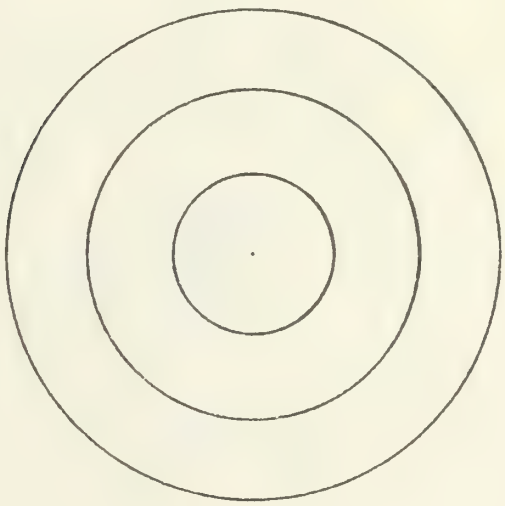


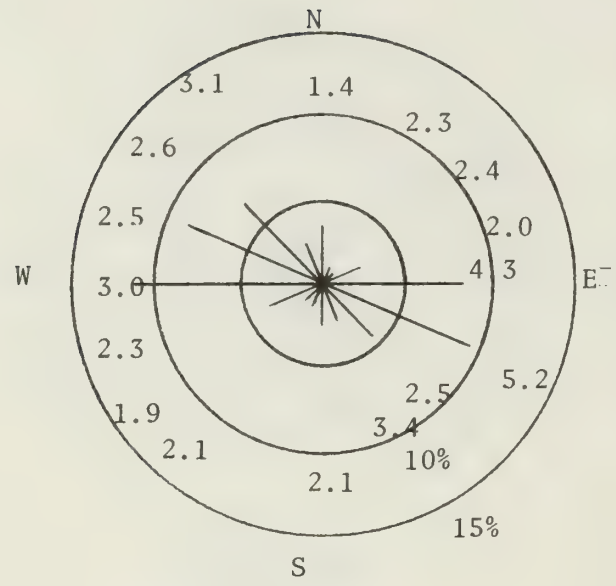
January 1979
Calm 59.3%
(Total hours 248)

Figure
Monthly Wind Roses
Surface
National Weather Service
Missoula, Montana

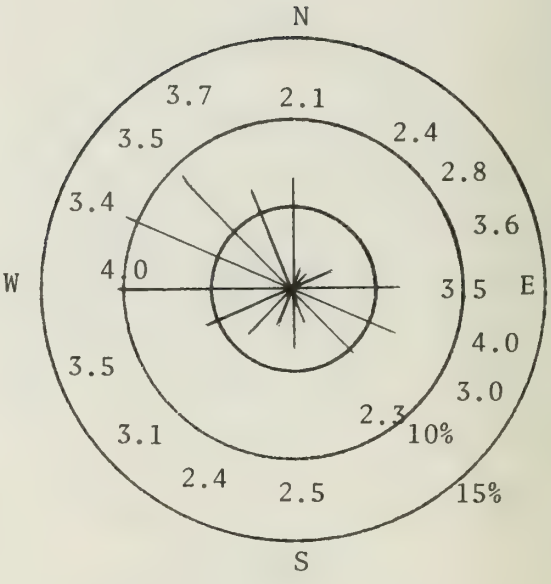


February 1979
Calm 25.0%
(Total hours 224)



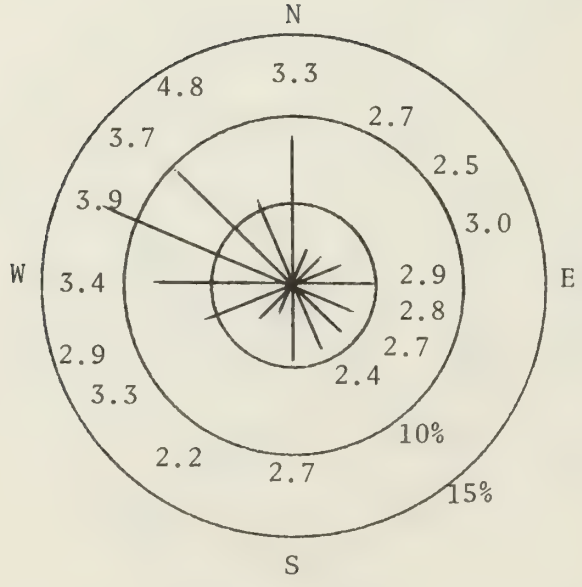


Winter 1977-1978
Calm 28.1%
(Total hours 720)

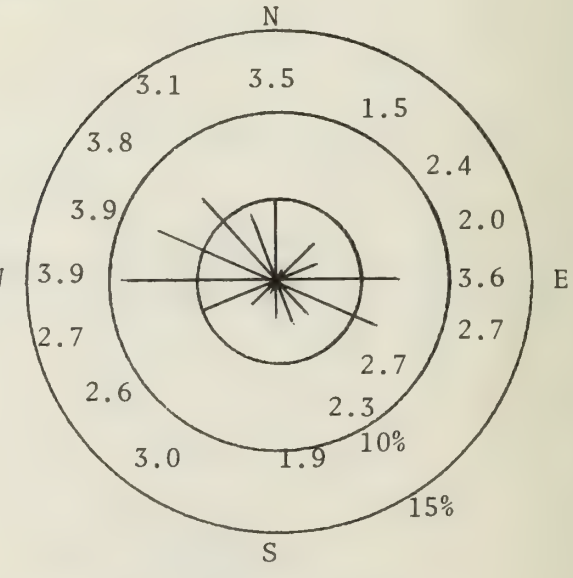


Spring 1978
Calm 13.8%
(Total hours 736)

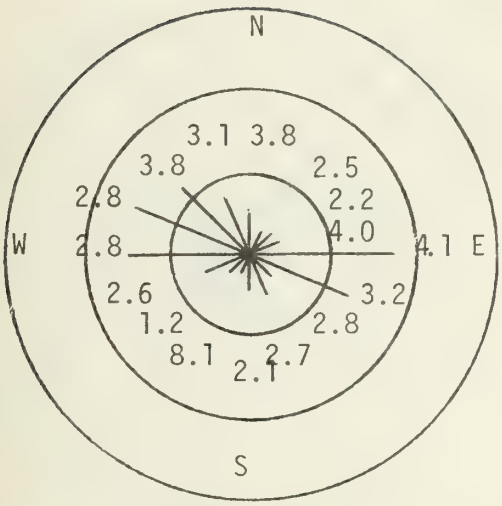
Figure
Seasonal Wind Roses
National Weather Service
Missoula, Montana

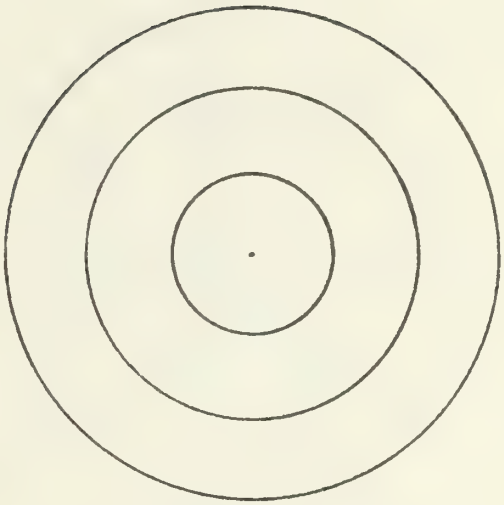


Summer 1978
Calm 16.6%
(Total hours 736)



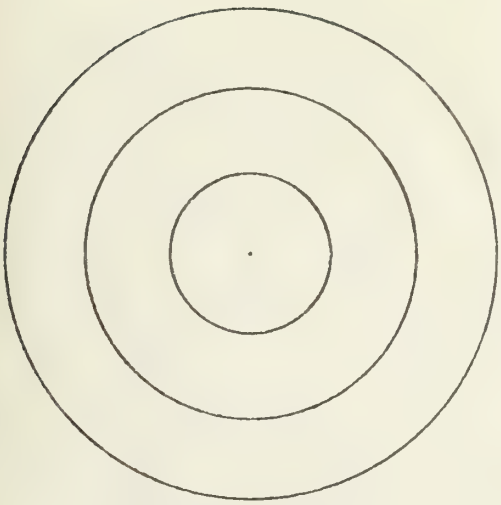
Autumn 1978
Calm 19.7%
(Total hours 736)

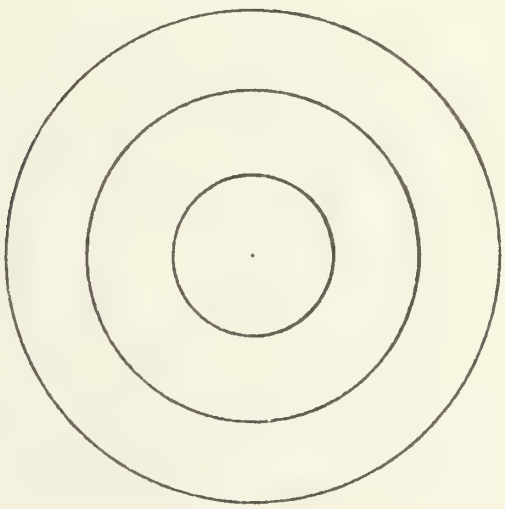


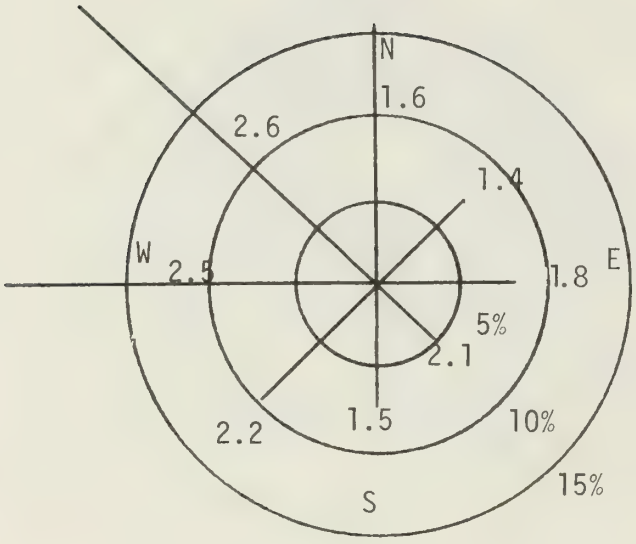


Winter 1978-1979
(Dec. 78, Jan. Feb. 79)
Calm 38.5%
(Total Hours 720)

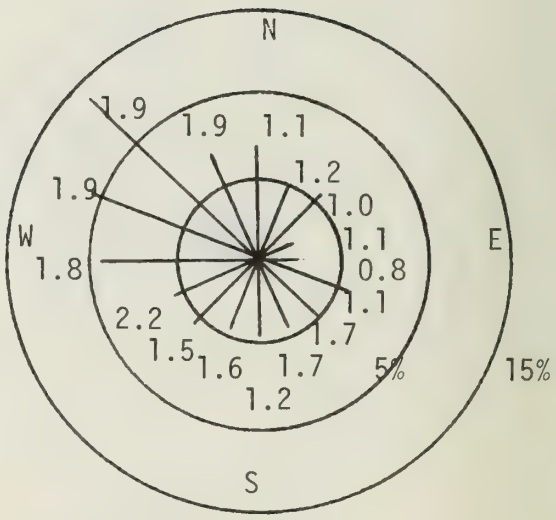
Figure
Seasonal Wind Roses
Surface
National Weather Service
Missoula, Montana





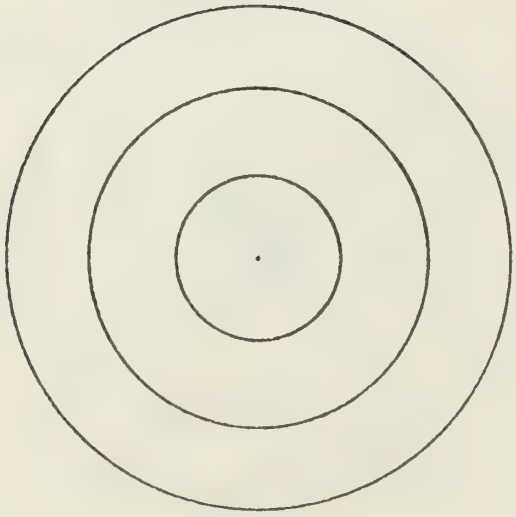


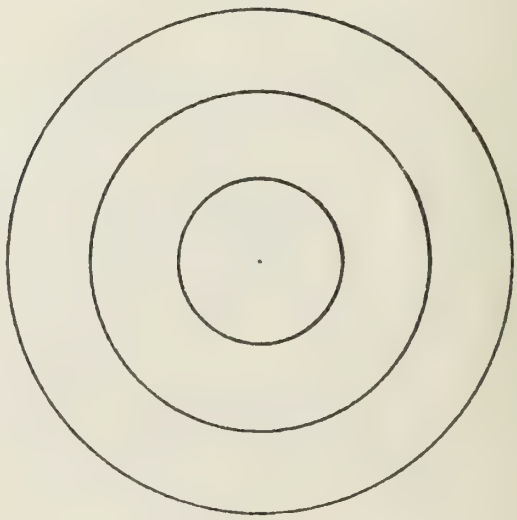
May 1978
Calm 0.0%
(total hours 644)

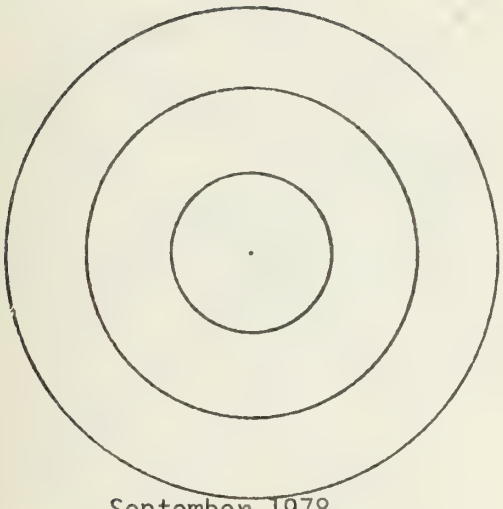


June 1978
Calm 0.0%
(total hours 649)

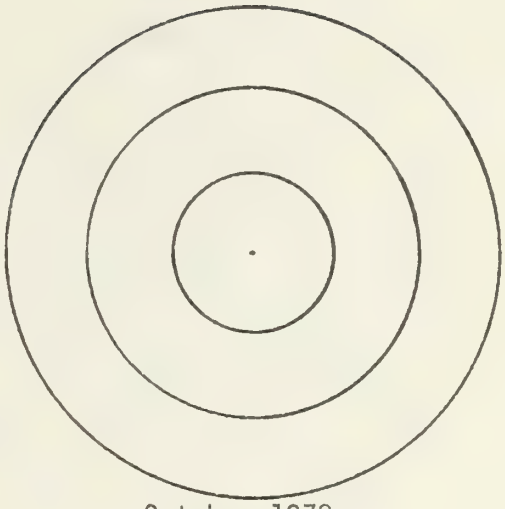
Figure
Monthly Wind Roses
Surface
Stiegler Site
Missoula, Montana





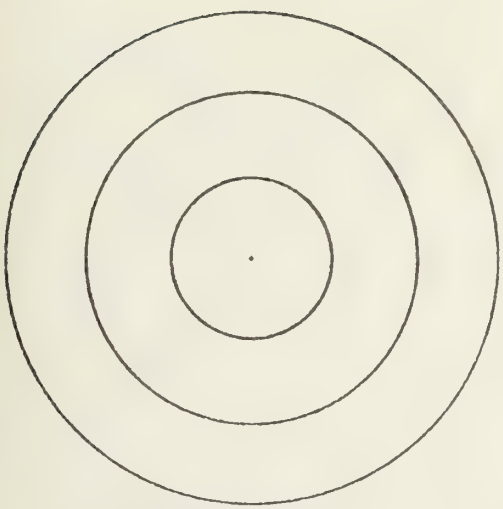


September 1978
No Data Available

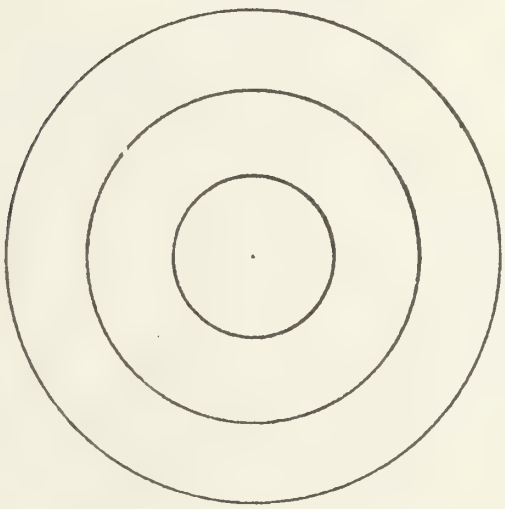


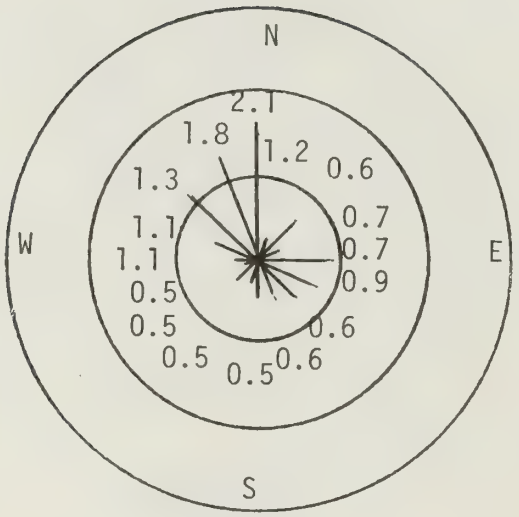
October 1978
No Data Available

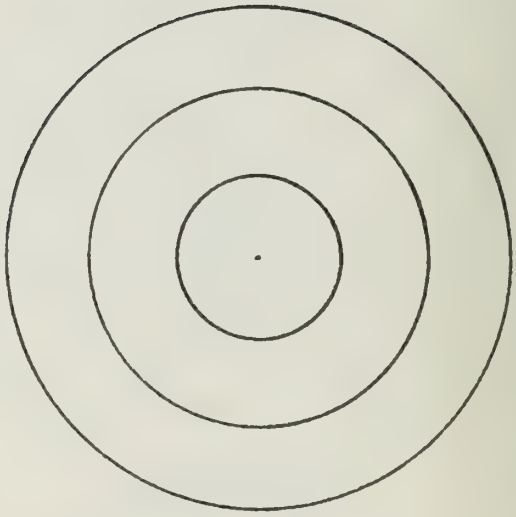
Figure
Monthly Wind Roses
Surface
Stiegler Site
Missoula, Montana



November 1978
No Data Available

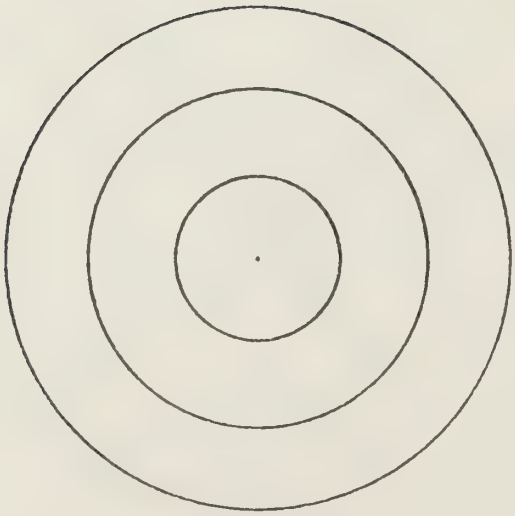


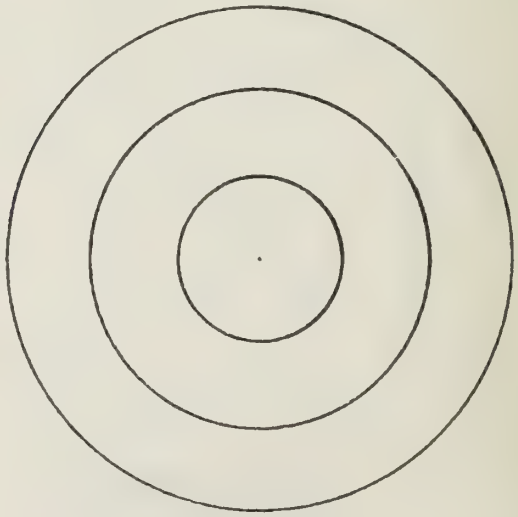


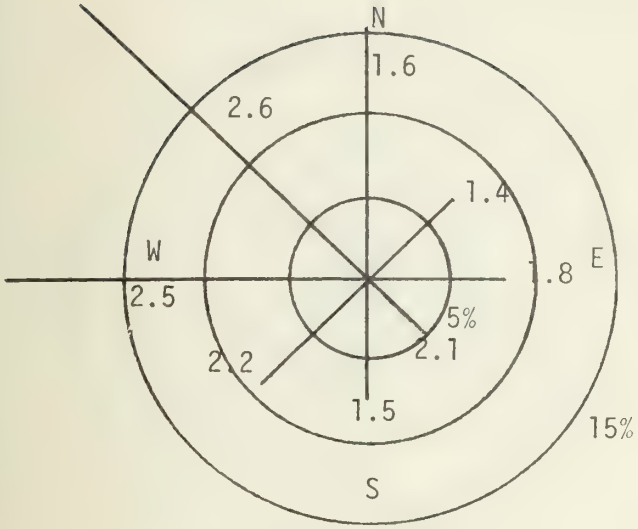


January 1979
Calm 47.5%
(Total Hours 640)

Figure
Monthly Wind Roses
Surface
Stiegler Site
Missoula, Montana

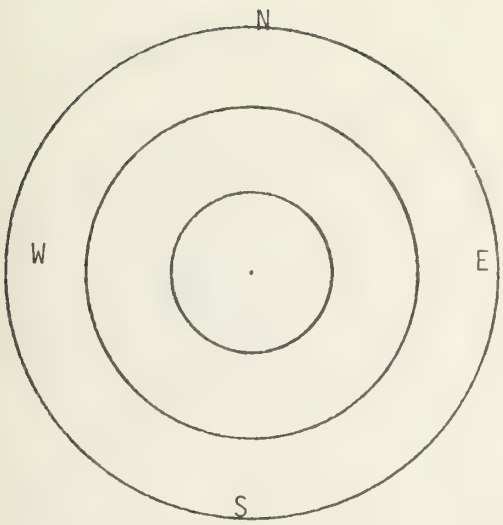






Spring 1978
(May only)
Calm 0.0%
(Total Hours 644)

Figure
Seasonal Wind Roses
Surface
Stiegler Site
Missoula, Montana



Autumn 1978
(Sept. Oct. Nov.)
No Data Available

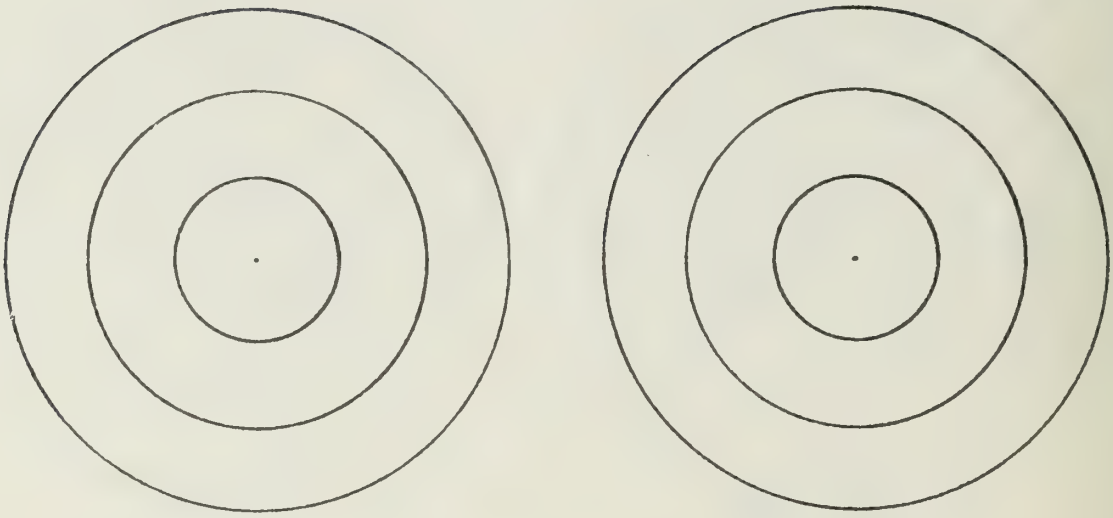
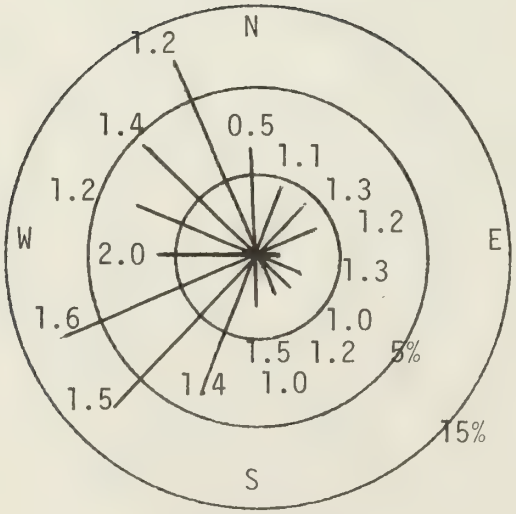
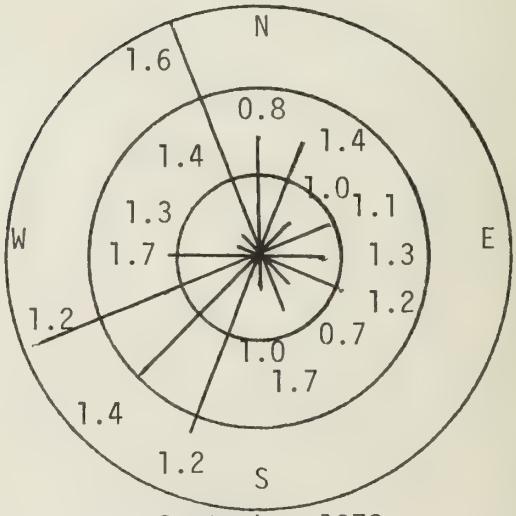


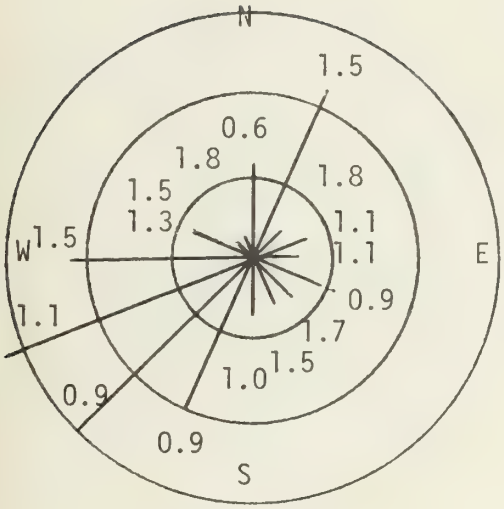
Figure
Monthly Wind Roses
Surface
Olofson Site
Missoula, Montana



August 1978
Calm 0.0%
(Total Hours 627)



September 1978
Calm 0.0%
(Total Hours 684)



October 1978
Calm 0.0%
(Total Hours 722)

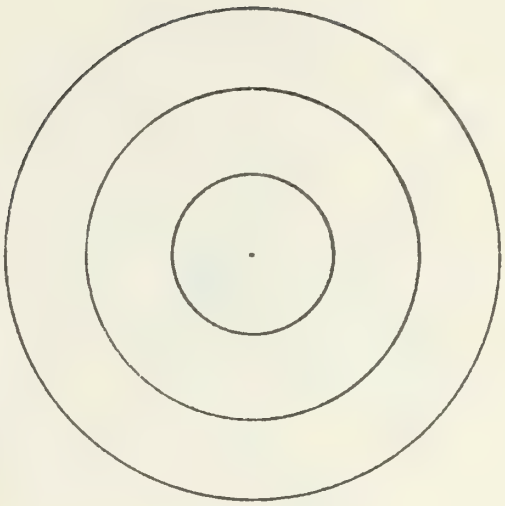
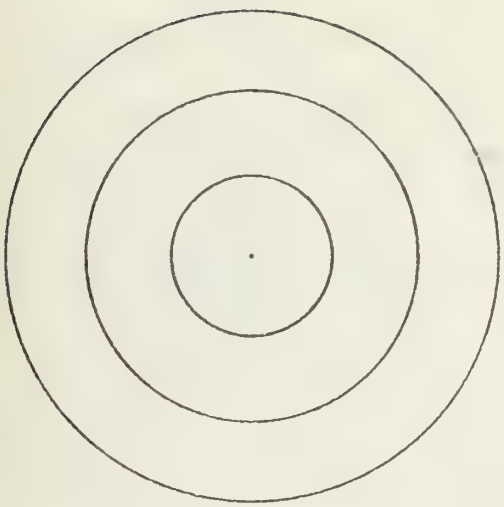
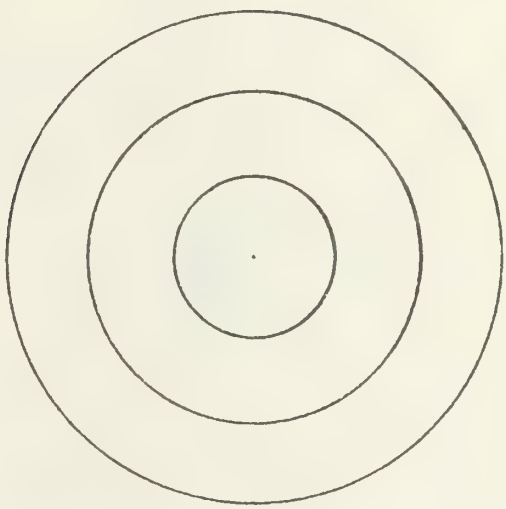
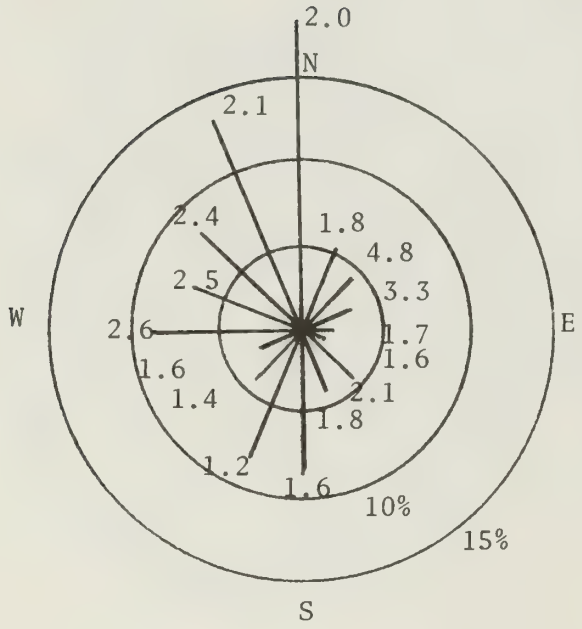


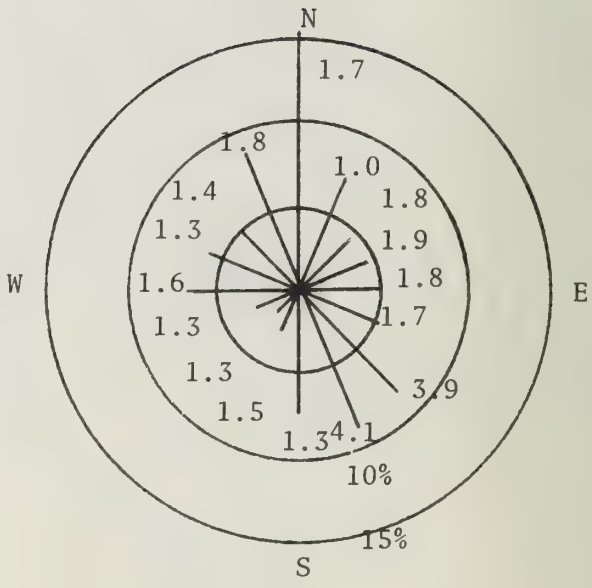
Figure
Monthly Wind Roses
Surface
Olofson Site
Missoula, Montana





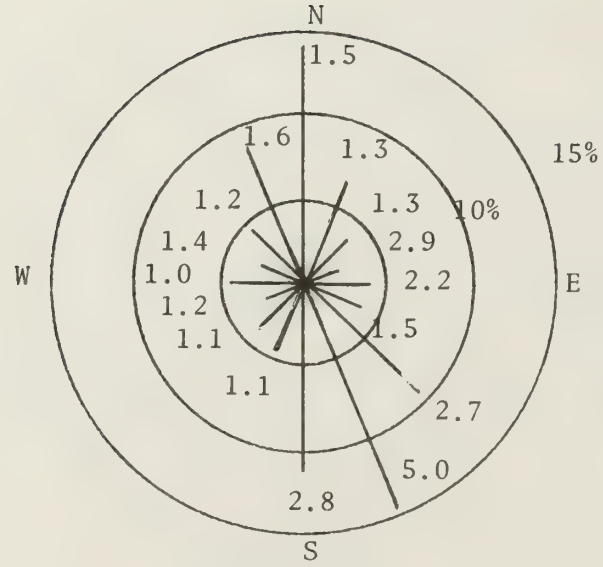


December 1977
Calm 0.2%
(Total hours 666)

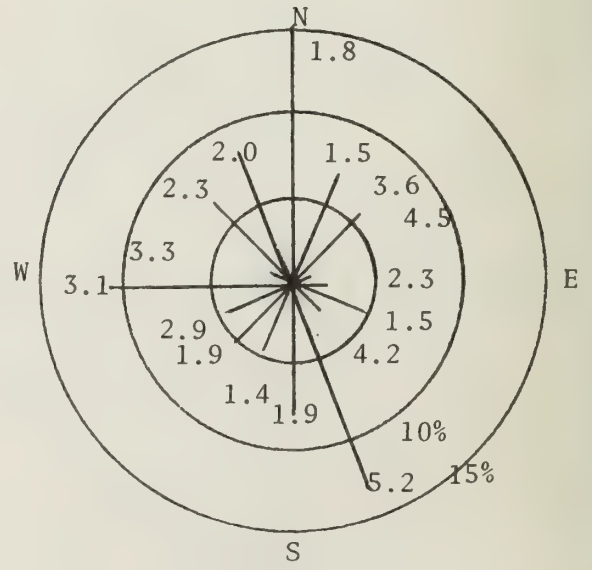


January 1978
Calm 0.0%
(Total hours 724)

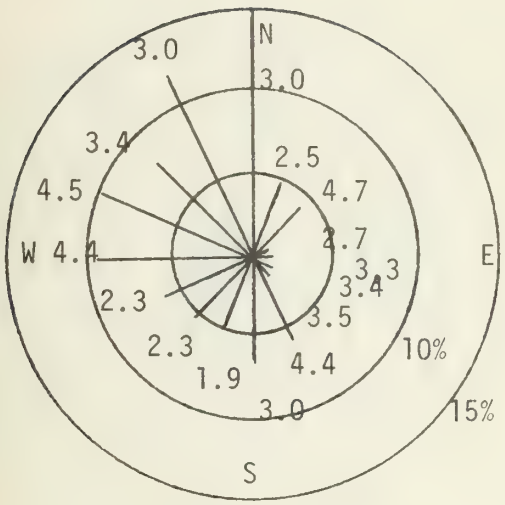
Figure
Monthly Wind Roses
Hoerner Waldorf #1
Missoula, Montana



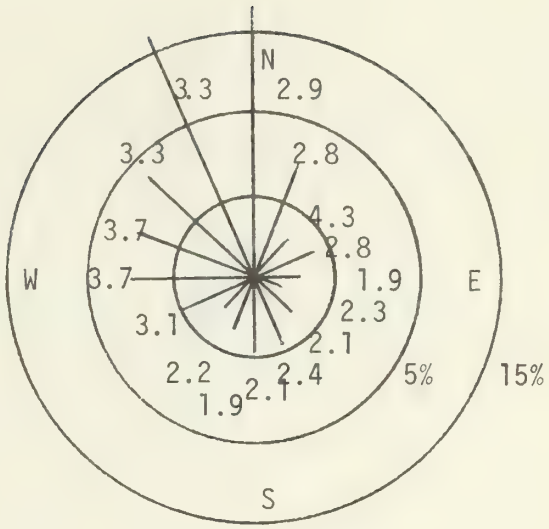
February 1978
Calm 0.2%
(Total hours 593)



March 1978
Calm 0.1%
(Total hours 744)

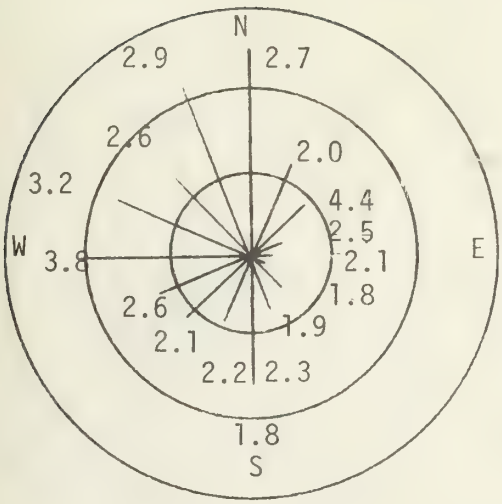


April 1978
Calm 0.0%
(Total Hours 696)

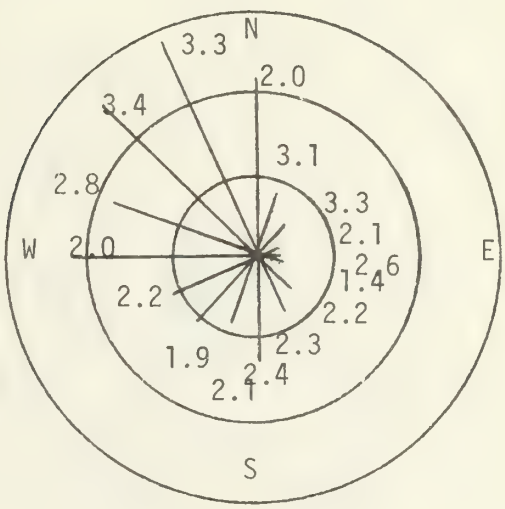


May 1978
Calm 0.0%
(Total Hours 743)

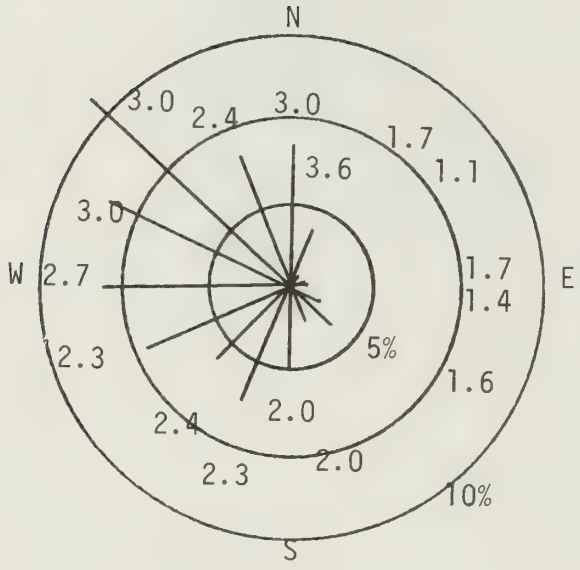
Figure
Monthly Wind Roses
Surface
Hoerner Waldorf #1
Missoula, Montana



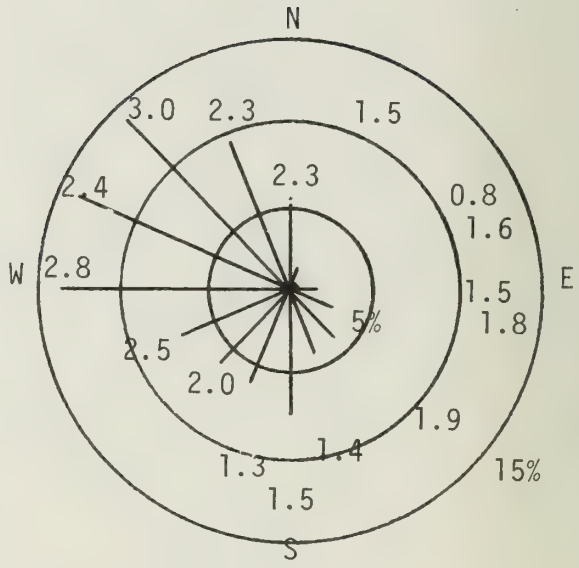
June 1978
Calm 0.0%
(Total Hours 600)



July 1978
Calm 0.0%
(Total Hours 695)

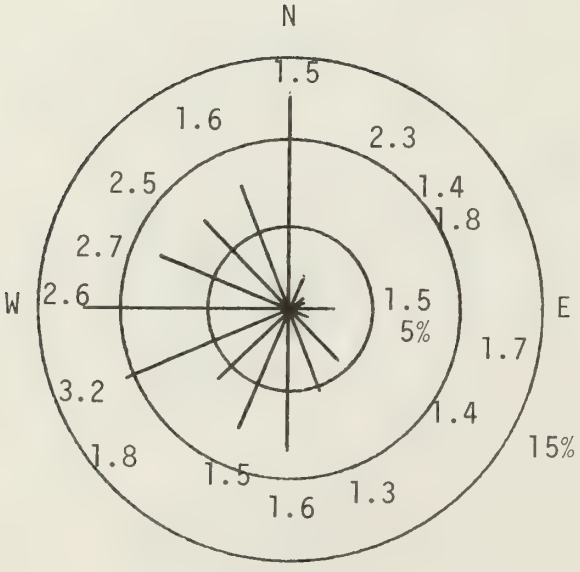


August 1978
Calm 0.3%
Total hours 732

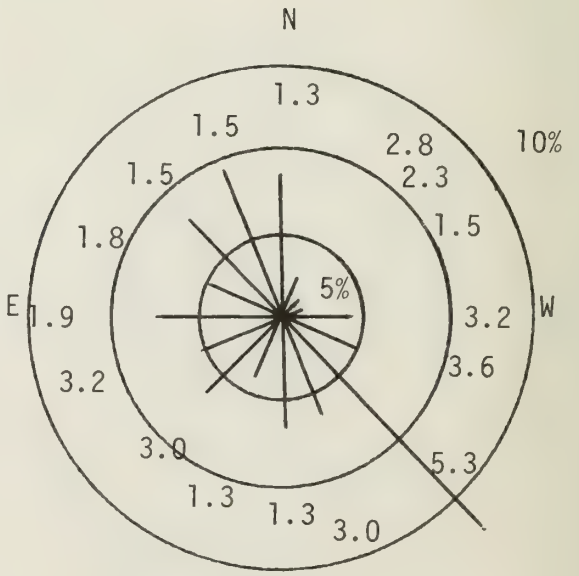


September 1978
Calm 0.6%
Total hours 692

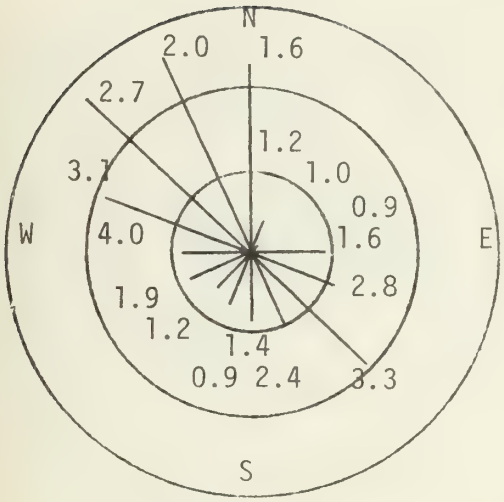
Monthly Wind Roses
Surface
Hoerner Waldorf #1
Missoula, Montana



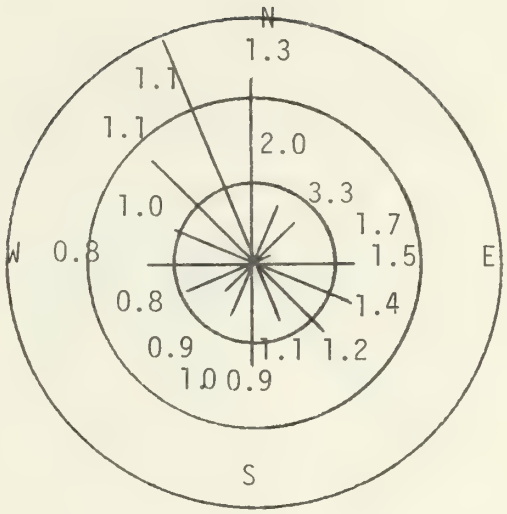
October 1978
Calm 0.4%
Total hours 729



November 1978
Calm 0.6%
Total hours 673

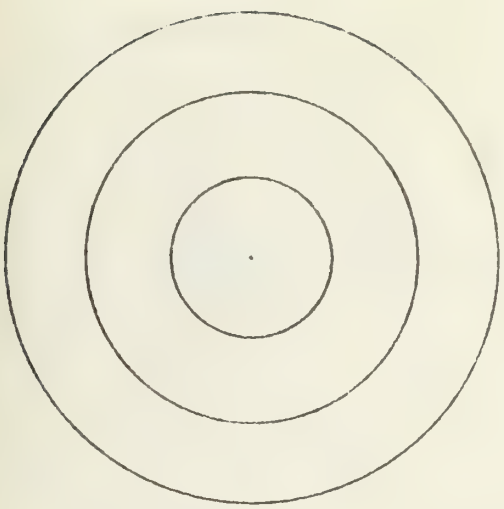


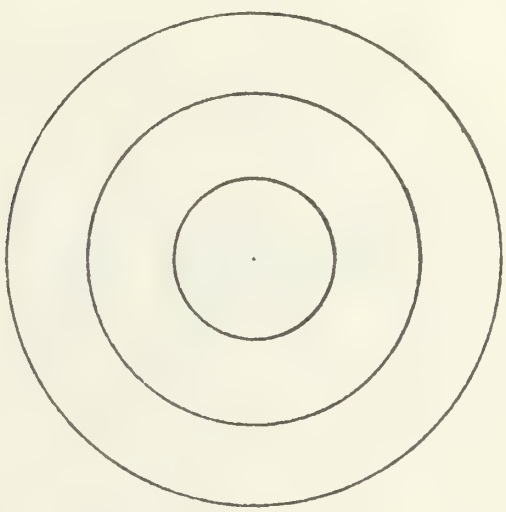
December 1978
Calm 0.7%
(Total Hours 705)

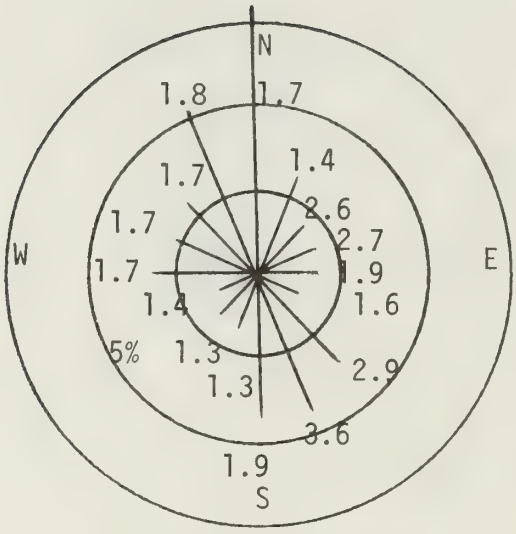


January 1979
Calm 1.8%
(Total Hours 723)

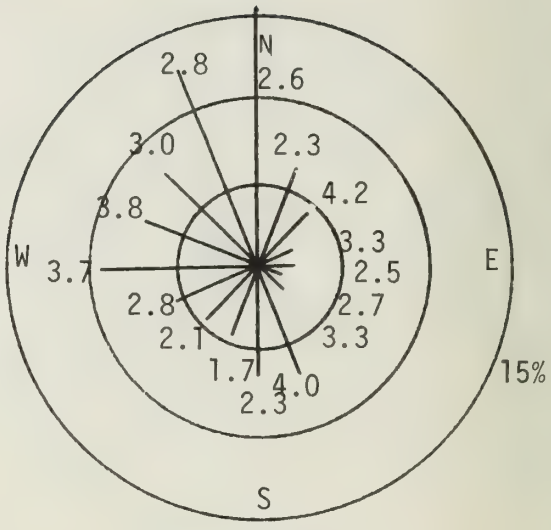
Figure
Monthly Wind Roses
Surface
Hoerner Waldorf #1
Missoula, Montana





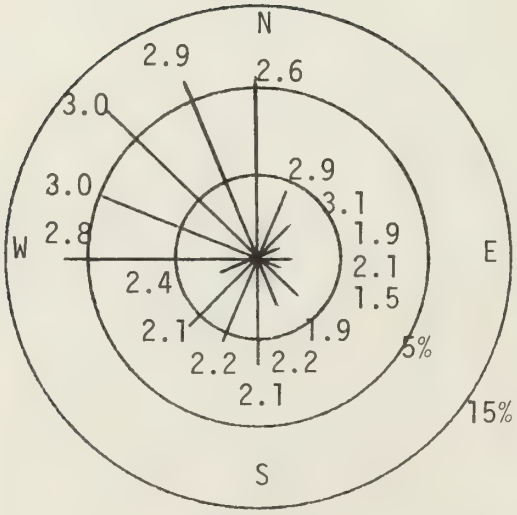


Winter 1977-78
(Dec. 1977, Jan.Feb. 1978)
Calm 0.2%
(Total Hours 1983)

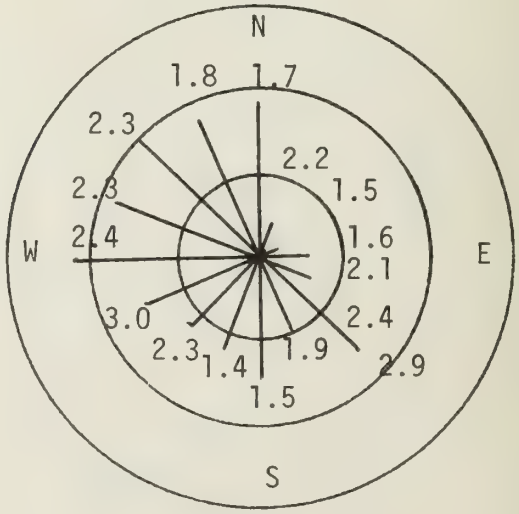


Spring 1978
(March, April, May)
Calm 0.0%
(Total Hours 2183)

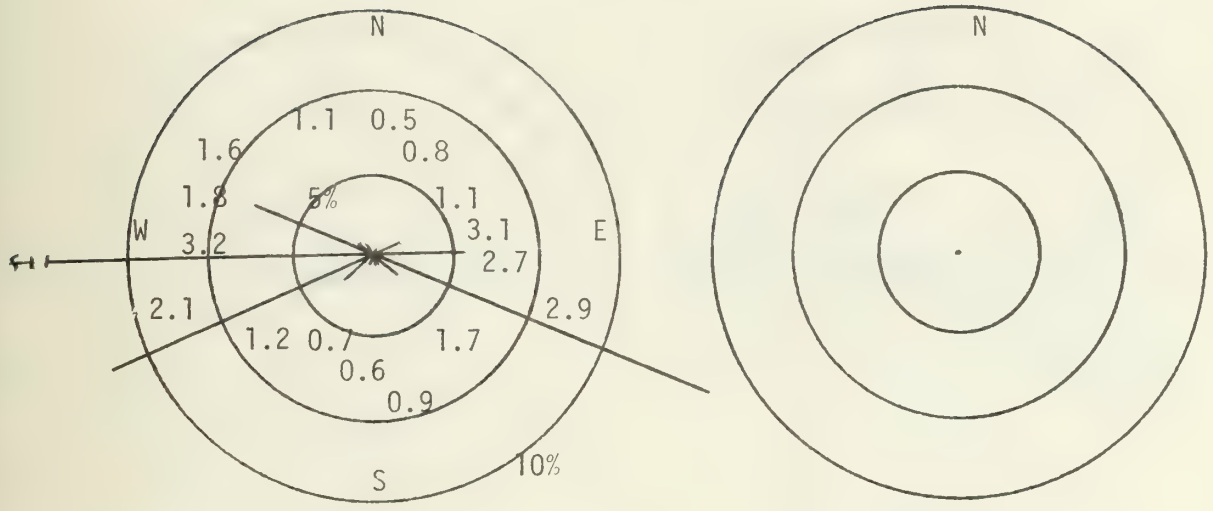
Figure
Seasonal Wind Roses
Surface
Hoerner Waldorf #1
Missoula, Montana



Summer 1978
(June, July, August)
Calm 0.1%
(Total Hours 2027)

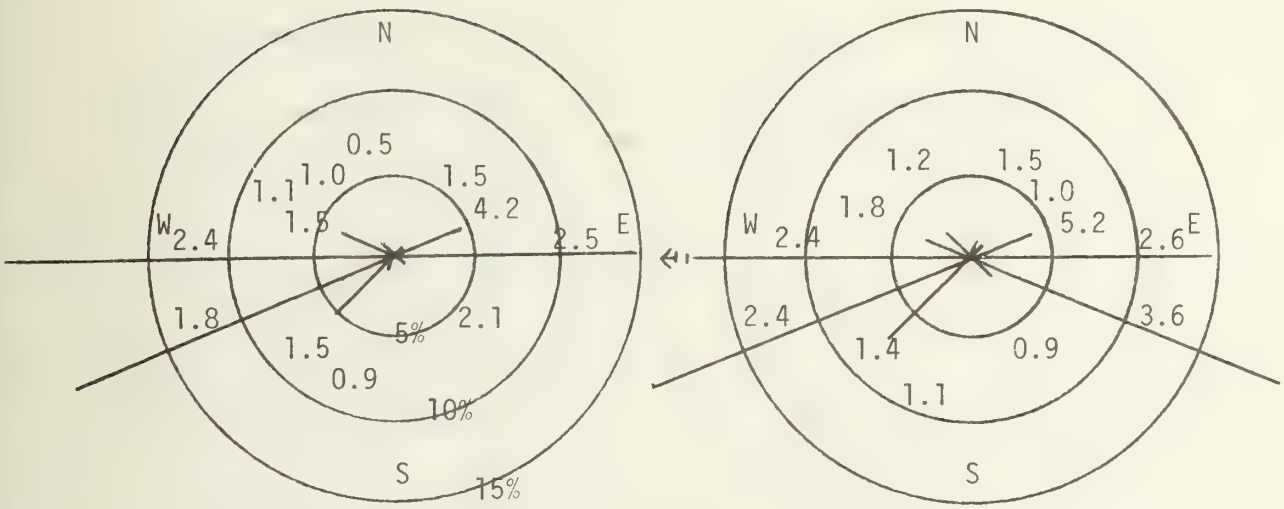


Autumn 1978
(Sept., Oct., Nov.)
Calm 0.5%
(Total Hours 2094)



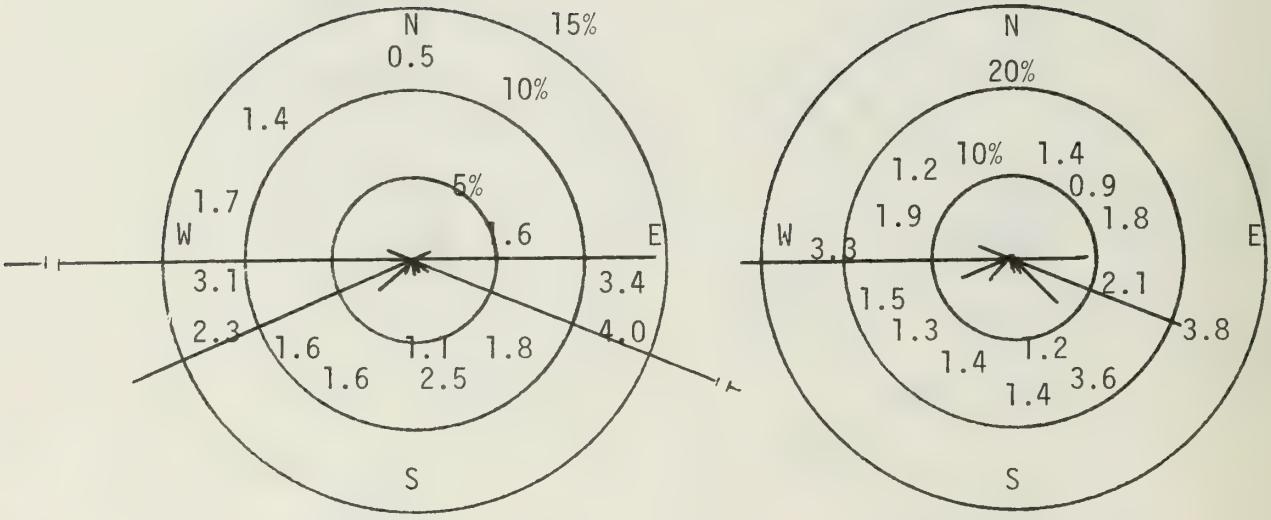
May 1978
Calm 0.0%
(Total Hours 727)

Figure
Monthly Wind Roses
Surface
University of Montana Site
Missoula, Montana



July 1978
Calm 0.0%
(Total Hours 717)

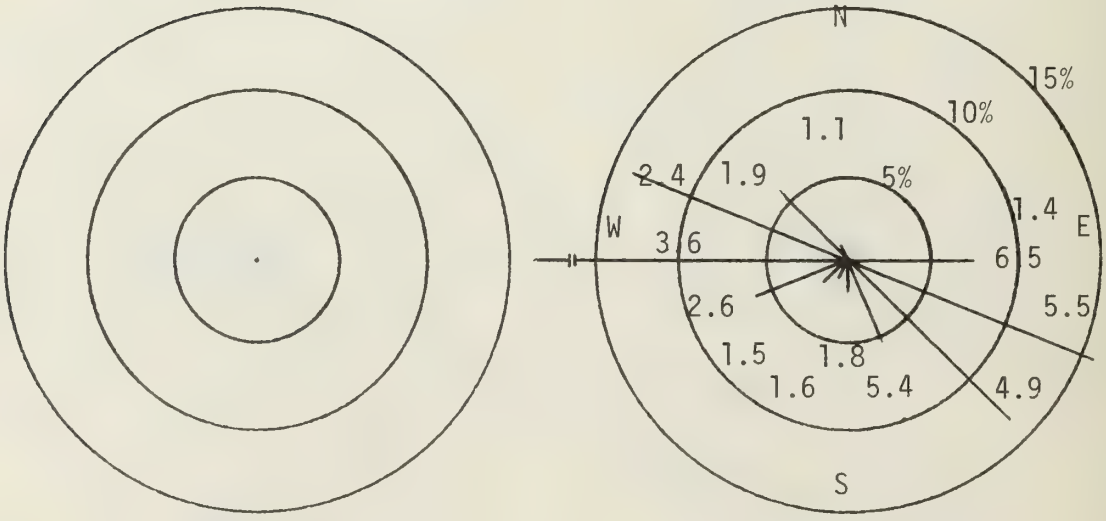
August 1978
Calm 0.0%
(Total hours 650)



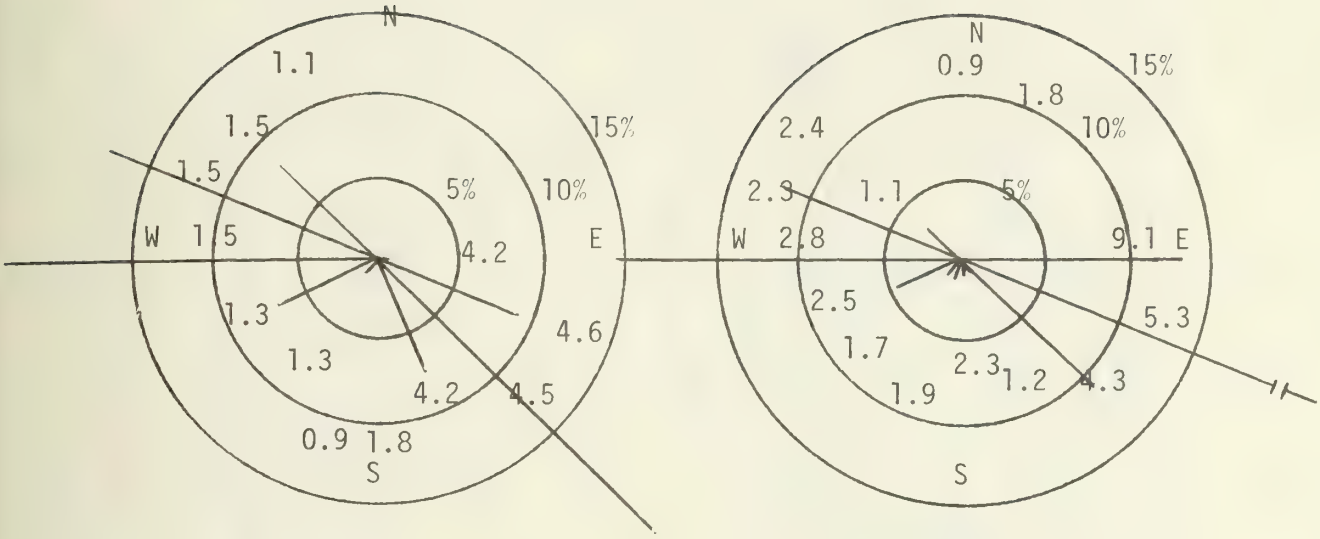
September 1978
Calm 0.0%
(Total Hours 489)

October 1978
Calm 0.2%
(Total Hours 578)

Figure
Monthly Wind Roses
Surface
Univ. of Montana Site
Missoula, Montana



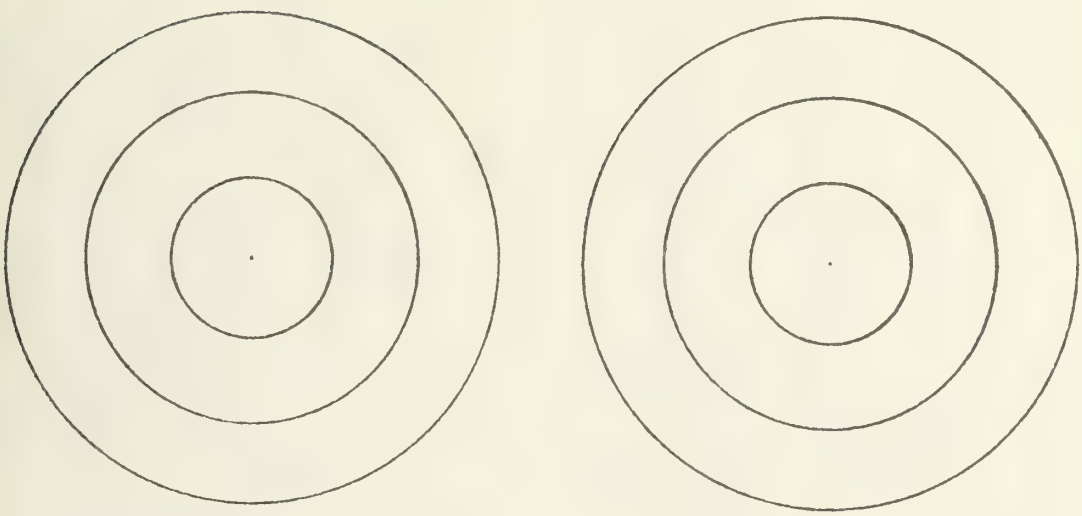
December 1978
Calm 0.0
(Total hours 539)

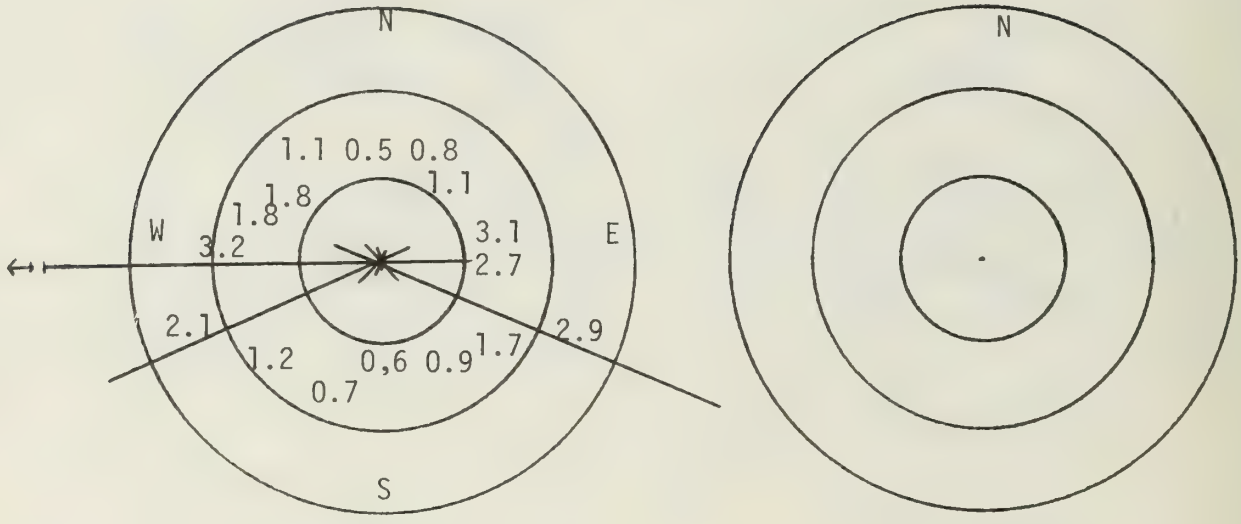


January 1979
Calm 0.0%
(Total Hours 577)

February 1979
Calm 0.0%
(total hours 462)

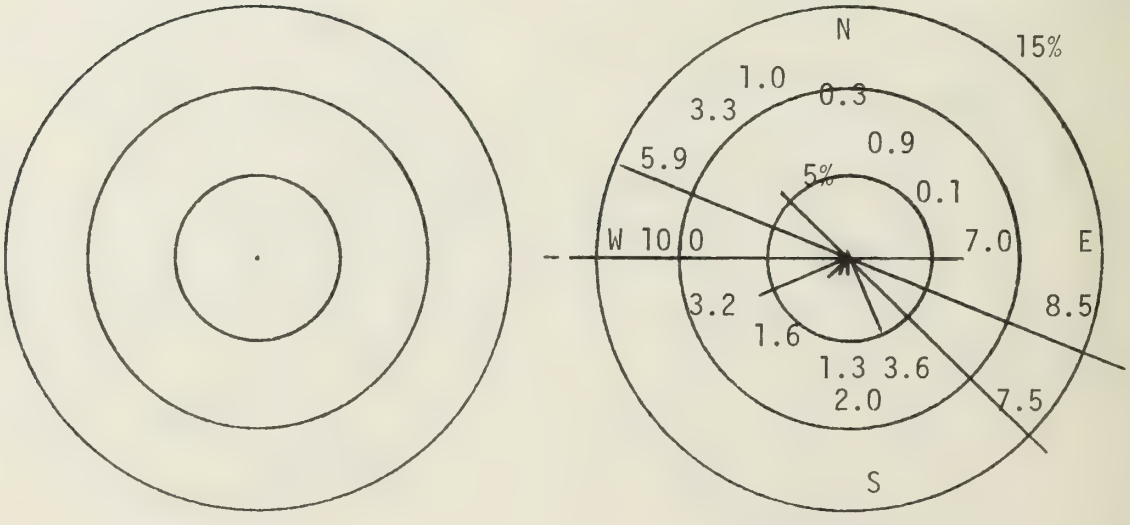
Figure
Monthly Wind Roses
Surface
University of Montana
Missoula, Montana





Spring 1978
(May only)
Calm 0.0%
(Total hours 727)

Figure
Seasonal Wind Roses
Surface
University of Montana
Missoula, Montana



Winter 1978-1977
(Dec. 78, Jan. Feb. 1979)
Calm 0.0%
(Total Hours 1578)

SITE - Missoula U.S.F.S. Northern Forest Fire Lab.

1978 JUN	JUL	AUG	SEP	OCT	NOV	DEC	1979 JAN	FEB	MAR	APR	MAY	SUM*	AUT	WIN	SPG	ANNUAL
AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - MORNING																
	2.54	1.39	0.745	1.70	1.72	1.234	1.516	0.883	1.665	1.121	1.365	1.877	1.575	1.236	1.400	1.492
AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - MORNING																
	-0.00	-0.69	-0.56	0.00	-0.80	-0.84	-1.29	-1.15	-0.96	-0.51	-0.56	-0.34	-0.45	-1.09	-0.68	-0.669
PERCENT FREQUENCY OF SURFACE BASED FIRST INVERSIONS - MORNING																
	77.8	58.3	18.2	77.8	50.0	50.0	16.7	44.4	80.0	41.7	53.8	66.7	53.3	35.5	60.0	53.0

*Two months only

1978 JUN	JUL	AUG	SEP	OCT	NOV	DEC	1979 JAN	FEB	MAR	APR	MAY	SUM*	AUT	WIN	SPG	ANNUAL
AVERAGE LAPSE RATE IN FIRST INVERSION (C/100m) - AFTERNOON																
	0.70	0.48	0.60	0.79	0.86	0.917	0.653	1.249	0.779	0.431	0.744	0.55	0.763	0.952	0.702	0.776
AVERAGE LAPSE RATE BELOW FIRST INVERSION (C) - AFTERNOON																
	-1.06	-1.26	-0.96	-1.07	-0.91	-1.05	-1.05	-1.66	-0.87	-0.92	-0.90	-1.16	-0.98	-1.25	-0.90	-1.064
PERCENT FREQUENCY OF SURFACED BASED FIRST INVERSIONS - AFTERNOON																
	12.5	9.1	0.0	0.0	0.0	10.0	0.0	10.0	9.1	0.0	0.0	10.5	0.00	6.2	3.3	4.3

*Two months only

Missoula - U.S.F.S. Northern Forest Fire Lab
1978-1979
Morning MIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM *	AUT	WIN	SPG	ANNUAL
0-100		3	2	1	7	6	1	2	0	5			5	14	3		
101-250		5	5	2	6	2	2	2	3	2			10	10	7		
251-500		0	3	3	0	6	5	6	3	2			3	9	14		
501-750		1	0	3	0	0	0	0	2	1			1	3	2		
751-1000		0	1	1	0	0	0	0	0	0			1	1	0		
1001-1500		0	0	0	0	1	0	0	1	0			0	1	1		
>1500		0	0	0	1	0	0	0	0	0			0	1	0		
Total		9	11	10	14	15	8	10	9	10			20	39	27		

* Two months only.

MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM *	AUT	WIN	SPG	ANNUAL
0-100		33.3	18.2	10.0	50.0	40.0	12.5	20.0	0.0	50.0			25.0	35.9	11.1		
101-250		55.6	45.5	20.0	42.8	13.3	25.0	20.0	33.3	20.0			50.0	25.6	25.9		
251-500		0.0	27.3	30.0	0.0	40.0	62.5	60.0	33.3	20.0			15.0	23.1	51.8		
501-750		11.1	0.0	30.0	0.0	0.0	0.0	0.0	22.2	10.0			5.0	7.7	7.4		
751-1000		0.0	9.1	10.0	0.0	0.0	0.0	0.0	0.0	0.0			5.0	2.6	0.0		
1001-1500		0.0	0.0	0.0	0.0	6.7	0.0	0.0	11.1	0.0			0.0	2.6	3.7		
>1500		0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0			0.0	2.6	0.0		
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)																	
		2.0	2.2	3.9	1.8	2.0	3.1	1.7	4.4	2.3			2.1	2.6	3.1		

Missoula - U.S.F.S. Northern Forest Fire Lab
1978-1979
Afternoon MIXING HEIGHTS - NUMBER OF OCCURRENCES

HEIGHT(m)	1978 JUN	JUL	AUG	SEP	OCT	NOV	DEC	1979 JAN	FEB	MAR	APR	MAY	SUM*	AUT	WIN	SPG	ANNUAL
0-100		0	0	0	0	0	0	0	0	0			0	0	0		
101-250		0	1	0	0	3	3	2	3	1			1	3	8		
251-500		1	3	2	2	5	2	4	4	3			4	9	10		
501-750		2	1	3	3	1	0	0	1	3			3	7	1		
751-1000		0	1	0	1	2	1	0	1	0			1	3	2		
1001-1500		0	0	1	2	0	0	0	0	0			0	3	0		
>1500		2	3	4	4	0	0	0	0	3			5	8	0		
Total		5	9	10	12	11	6	6	9	10			14	33	21		

* Two months only.

Afternoon MIXING HEIGHTS - PERCENT OCCURRENCE

HEIGHT(m)	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	SUM *	AUT	WIN	SPG	ANNUAL
0-100		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0		
101-250		0.0	11.1	0.0	0.0	27.3	50.0	33.3	33.3	10.0			7.1	9.1	38.1		
251-500		20.0	33.3	20.0	16.7	45.4	33.3	66.7	44.4	30.0			28.6	27.3	47.6		
501-750		40.0	11.1	30.0	25.0	9.1	0.0	0.0	11.1	30.0			21.4	21.2	4.8		
751-1000		0.0	11.1	0.0	8.3	18.2	16.7	0.0	11.1	0.0			7.1	9.1	9.5		
1001-1500		0.0	0.0	10.0	16.7	0.0	0.0	0.0	0.0	0.0			0.0	9.1	0.0		
>1500		40.0	33.3	40.0	33.3	0.0	0.0	0.0	0.0	30.0			35.7	24.2	0.0		
AVERAGE WIND SPEED THROUGH MIXED LAYER (m/sec)																	
		4.6	3.7	6.6	3.7	1.9	3.1	1.3	2.8	3.6			4.1	4.1	2.6		

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: U.S.F.S. Norther Forest Fire Lab - Missoula
MONTH OR SEASON: Summer 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	3.8	2.5	8.9	8.9	2.5	8.9	7.6	5.1				48.2
101-250	10.1	1.3	3.8	8.9	8.9	3.8	3.8	1.3				41.9
251-500	3.8	0.0	0.0	2.5	2.5	0.0	0.0	1.3				10.1
501-750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0
total	17.7	3.8	12.7	20.3	13.9	12.7	11.4	7.7				100.2

No Inversion 1

Total No. of Occurrences

Inversion Type												
1	0.0	2.5	2.5	8.9	3.8	3.8	6.3	3.8				31.6
2	3.8	0.0	7.6	7.6	10.1	7.6	5.1	2.5				44.3
3	10.1	1.3	2.5	2.5	0.0	1.3	0.0	1.3				19.0
4	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0				2.5
5	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0				1.3

MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	9.5		9.5	4.8	4.8	4.8	14.3	28.6	4.8	4.8		85.9
101-250	0.0		0.0	0.0	0.0	4.8	0.0	4.8	0.0	0.0		9.6
251-500	0.0		0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0		4.8
501-750	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total	9.5		9.5	4.8	4.8	9.6	14.3	38.2	4.8	4.8		100.3

No Inversion 3

Total No. of Occurrences

Inversion Type												
1	0.0		4.8	0.0	4.8	0.0	9.5	38.1	4.8	0.0		62.0
2	4.8		4.8	4.8	0.0	9.5	4.8	0.0	0.0	0.0		28.7
3	4.8		0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8		9.6
4	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
5	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: U.S.F.S. Northern Forest Fire Lab - Missoula
MONTH OR SEASON: Autumn 1978 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	1.5	0.8	2.3	6.9	7.6	3.0	4.6	7.6				34.3
101-250	9.2	1.5	4.6	5.3	6.9	7.6	4.6	5.3				45.0
251-500	6.1	0.0	3.0	3.8	1.5	0.8	1.5	0.8				17.5
501-750	1.5	0.0	0.0	0.8	0.8	0.0	0.0	0.0				3.1
total	18.3	2.3	9.9	16.8	16.8	11.4	10.7	13.7				99.9

No Inversion 4

Total No. of Occurrences

Inversion Type												
1	0.8	1.5	2.3	6.1	6.1	4.6	6.1	6.9				34.4
2	6.1	0.8	6.1	6.9	9.2	5.3	4.6	4.6				43.6
3	7.6	0.0	1.5	3.8	1.5	0.8	0.0	2.3				17.5
4	3.8	0.0	0.0	0.0	0.0	0.8	0.0	0.0				4.6
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0

MONTH OR SEASON: AFTERNOON

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100			0.0	12.3	12.3	8.8	5.3	10.5				49.2
101-250			10.5	7.0	8.8	0.0	3.5	14.0				43.8
251-500			0.0	1.8	1.8	1.8	1.8	0.0				7.2
501-750			0.0	0.0	0.0	0.0	0.0	0.0				0.0
Total			10.5	21.1	22.9	10.6	10.6	24.5				100.2

No Inversion 7

Total No. of Occurrences

Inversion Type												
1			7.0	5.3	10.5	7.0	5.3	14.0				49.1
2			1.8	12.3	10.5	1.8	3.5	7.0				36.9
3			1.8	1.8	1.8	0.0	0.0	3.5				8.9
4			0.0	1.8	0.0	1.8	0.0	0.0				3.6
5			0.0	0.0	0.0	0.0	1.8	0.0				1.8

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: U.S.F.S. Northern Forest Fire Lab - Missoula
MONTH OR SEASON: Winter 1978-79 MORNING

INVERSION BASE HEIGHT

THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	5.4	0.0	2.2	6.5	2.2	4.3	5.4	8.7				34.7
101-250	4.3	5.4	5.4	8.7	9.8	2.2	7.6	4.3				47.7
251-500	2.2	1.1	1.1	3.3	1.1	3.3	3.3	0.0				15.4
501-750	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0				2.2
total	11.9	6.5	10.9	18.5	13.1	9.8	16.3	13.0				100.0

No Inversion 1

Total No. of Occurrences

Inversion Type												
1	1.1	1.1	2.2	6.5	2.2	4.3	5.4	8.7				31.5
2	4.3	3.3	6.5	2.2	6.5	1.1	6.5	1.1				31.5
3	3.3	2.2	2.2	8.7	4.3	3.3	4.3	2.2				30.5
4	3.3	0.0	0.0	1.1	0.0	1.1	0.0	1.1				6.6
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0

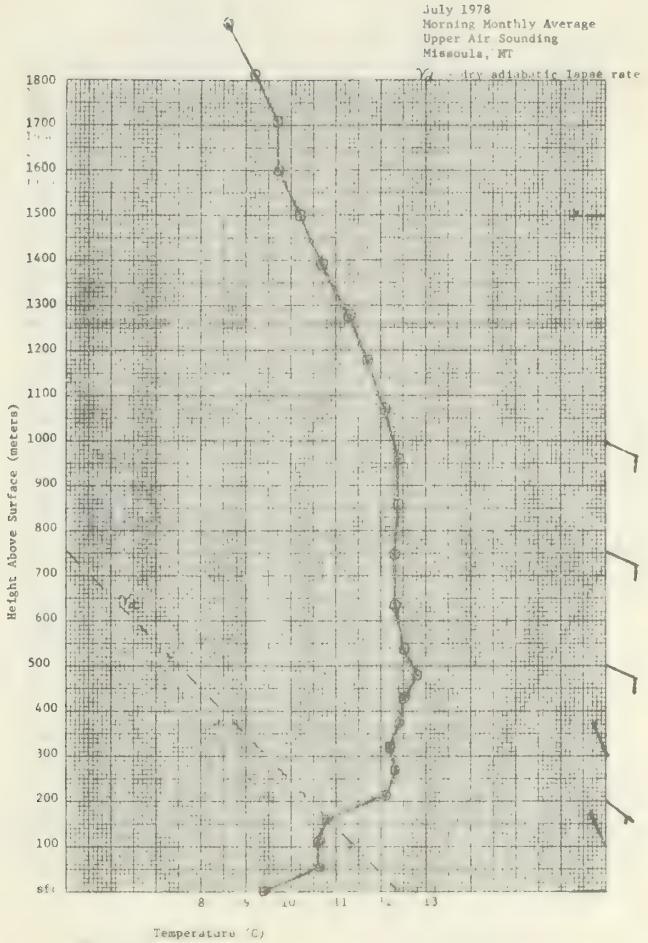
MONTH OR SEASON: AFTERNOON

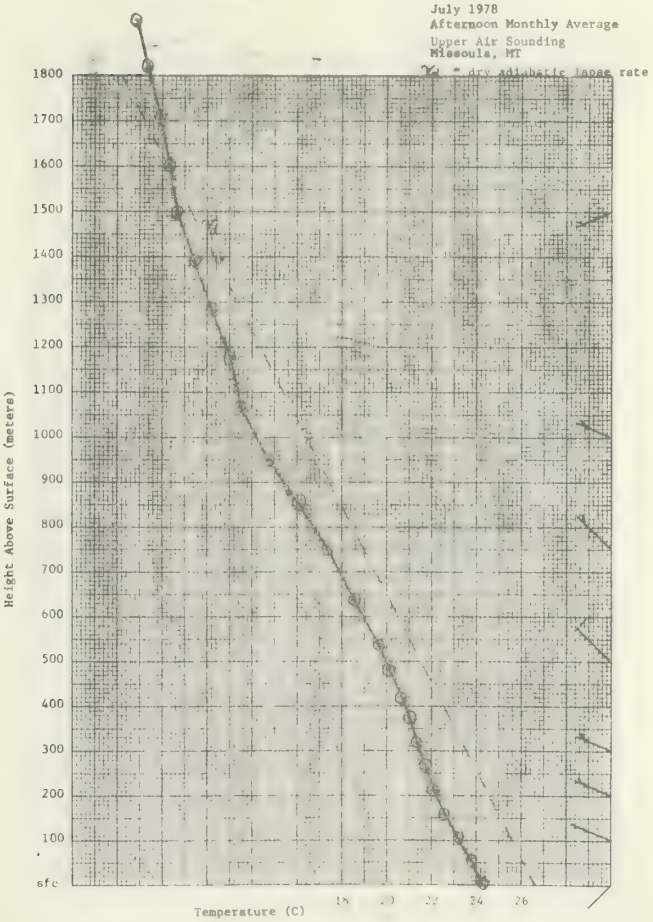
THICKNESS	SFC	1-100	101-250	251-500	501-750	751-1000	1001-1500	1501-2000	2001-2500	2501-3000	>3000	Total
1-100	1.3	2.6	7.7	7.7	7.7	3.8	6.4	5.1	1.3			43.6
101-250	1.3	3.8	9.0	11.5	7.7	3.8	2.6	7.7	0.0			47.4
251-500	0.0	1.3	3.8	0.0	0.0	1.3	0.0	1.3	0.0			7.7
501-750	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0			1.3
Total	2.6	7.7	20.5	20.5	15.4	8.9	9.0	14.1	1.3			100.0

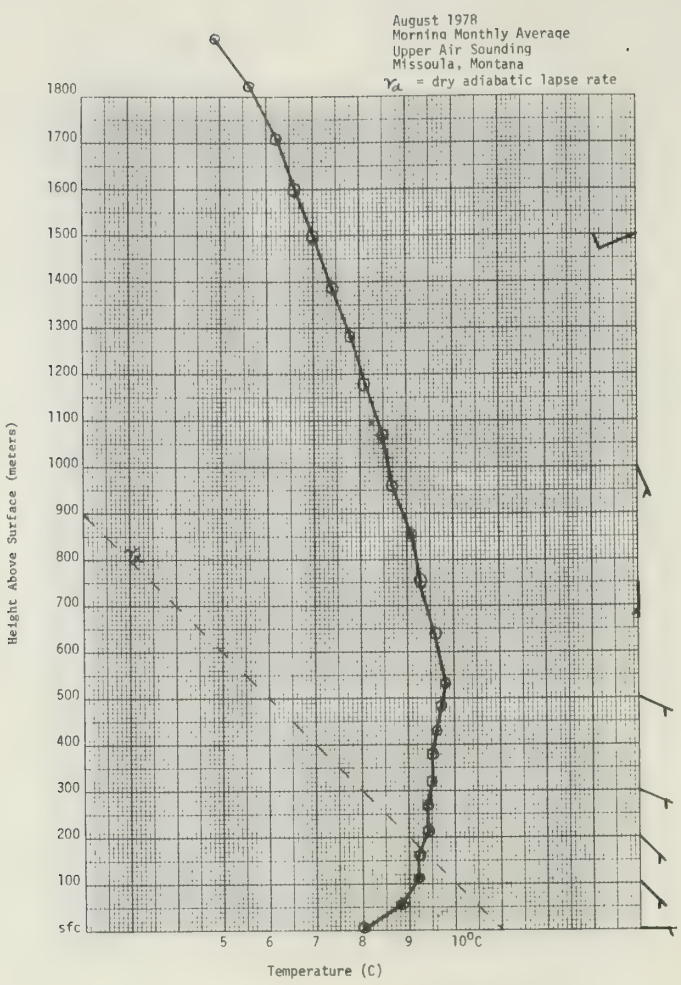
No Inversion 2

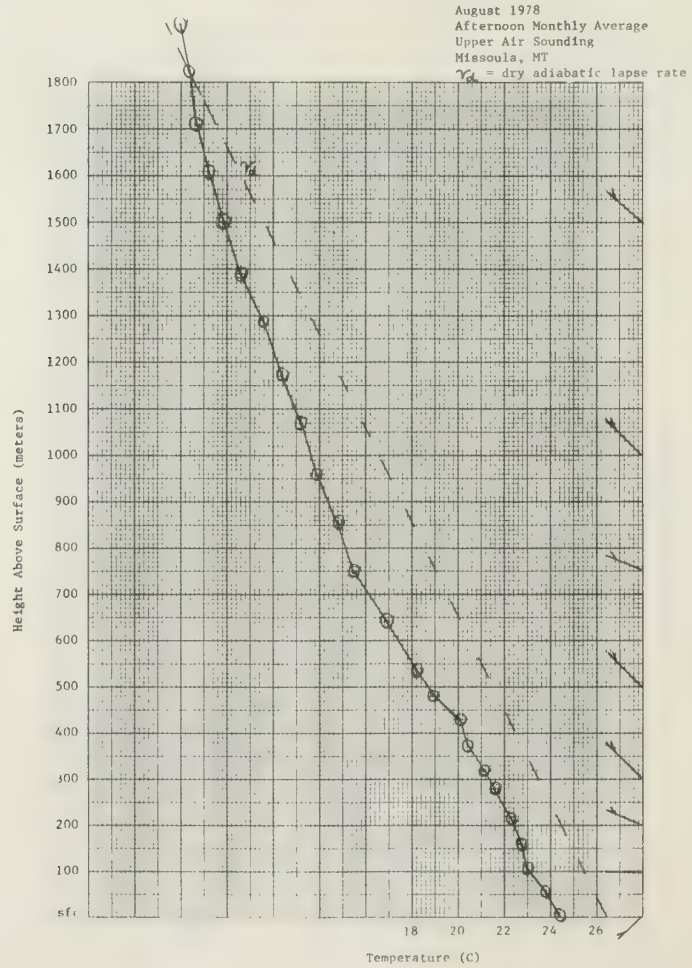
Total No. of Occurrences

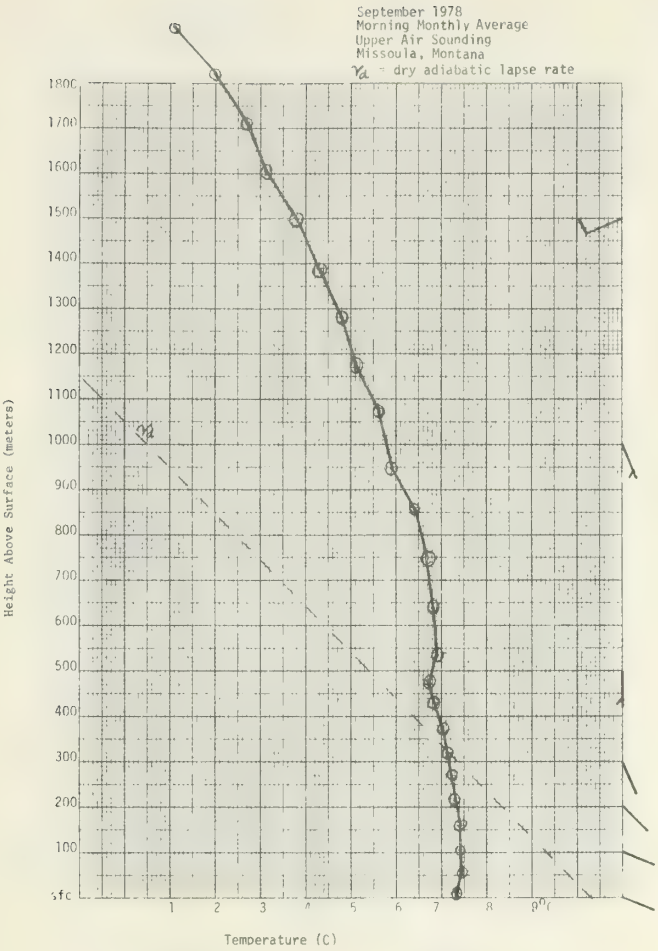
Inversion Type												
1	0.0	1.3	6.4	6.4	9.0	2.6	5.1	5.1	1.3			37.2
2	1.3	3.8	7.7	10.2	3.8	2.6	1.3	5.1	0.0			36.1
3	1.3	2.6	6.4	3.8	2.6	3.8	2.6	3.8	0.0			26.9
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0

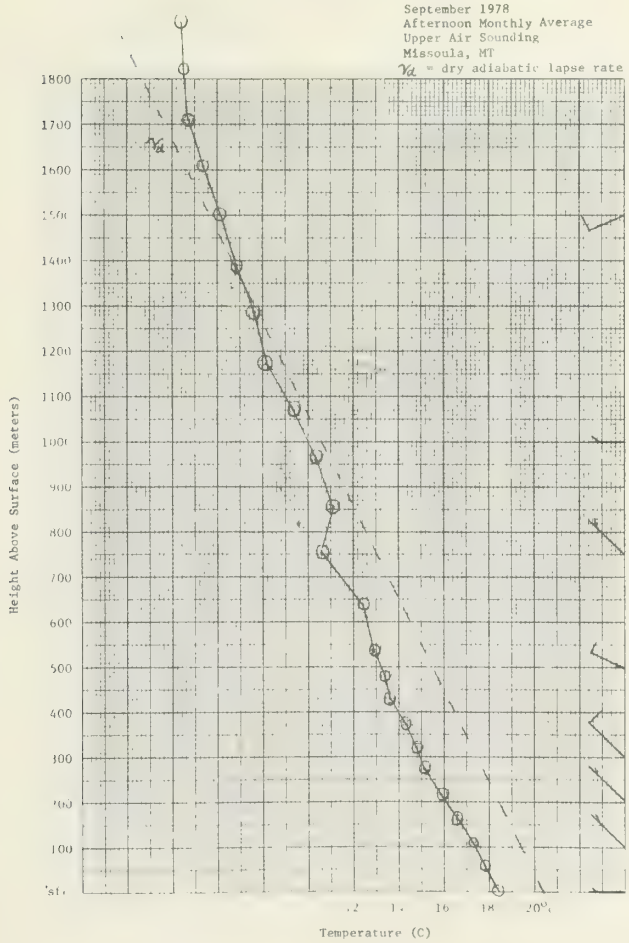

July 1978
Morning Monthly Average
Upper Air Sounding
Missoula, MT
Height Above Surface (meters)
Temperature (C)

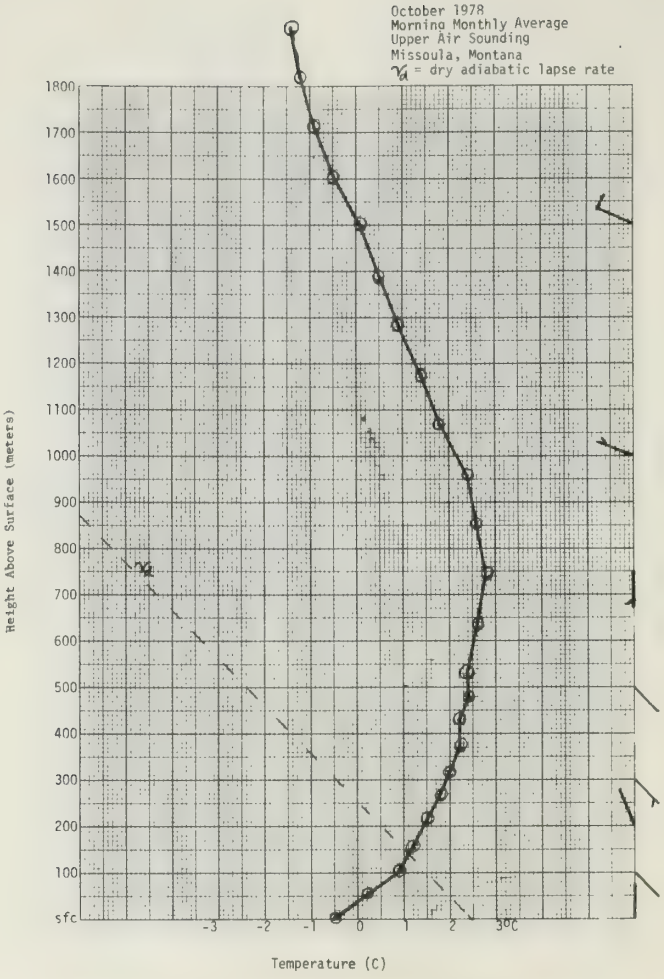

July 1978
Afternoon Monthly Average
Upper Air Sounding
Missoula, MT
Height Above Surface (meters)
Temperature (C)

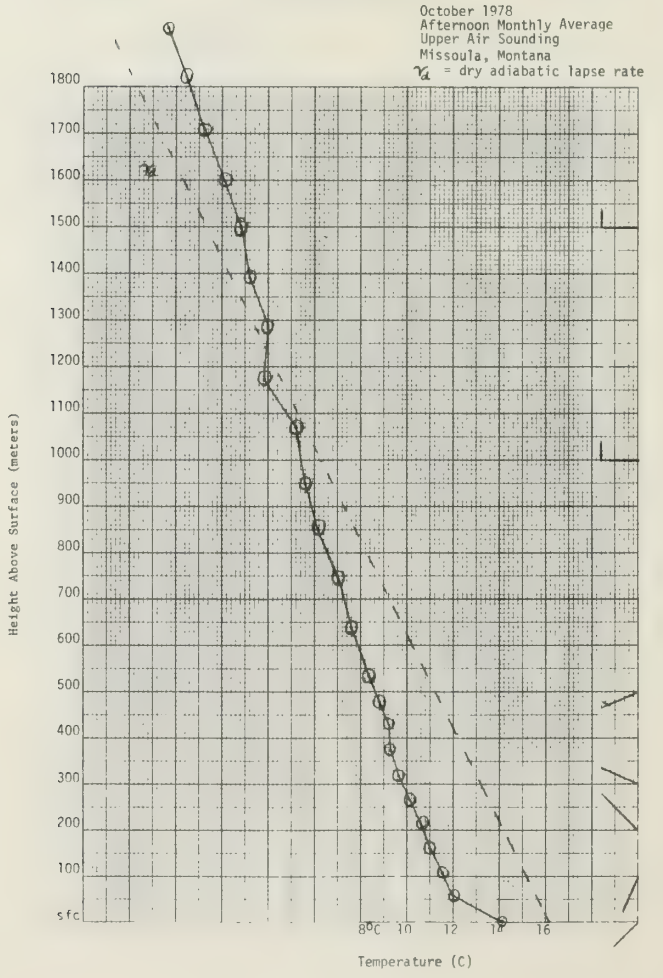

August 1978
Morning Monthly Average
Upper Air Sounding
Missoula, Montana
γ_a = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
5
6
7
8
9
10°C
Temperature (C)

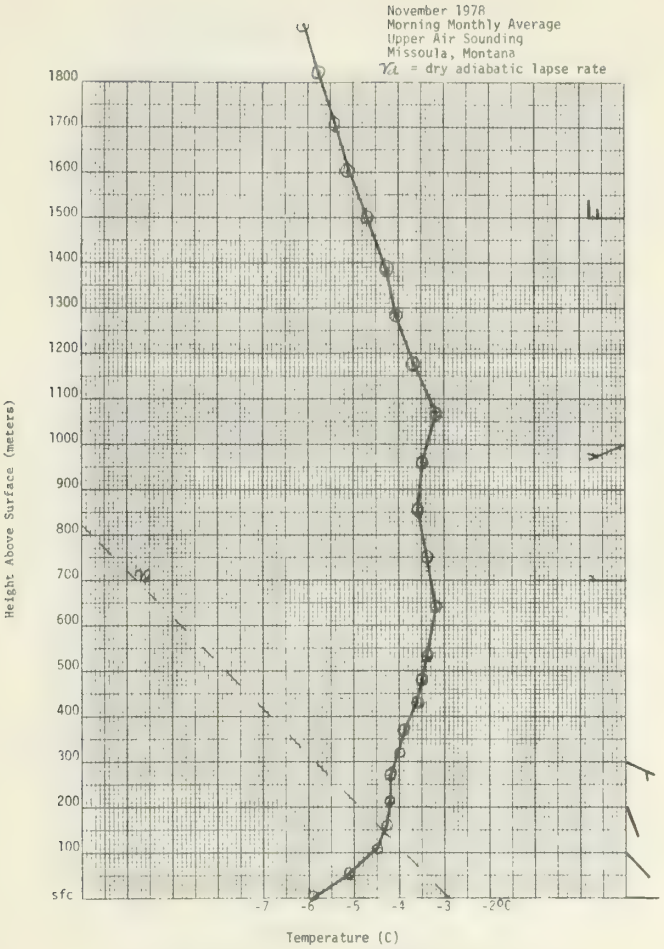

August 1978
Afternoon Monthly Average
Upper Air Sounding
Missoula, MT
γ_a = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
18
20
22
24
26
Temperature (C)

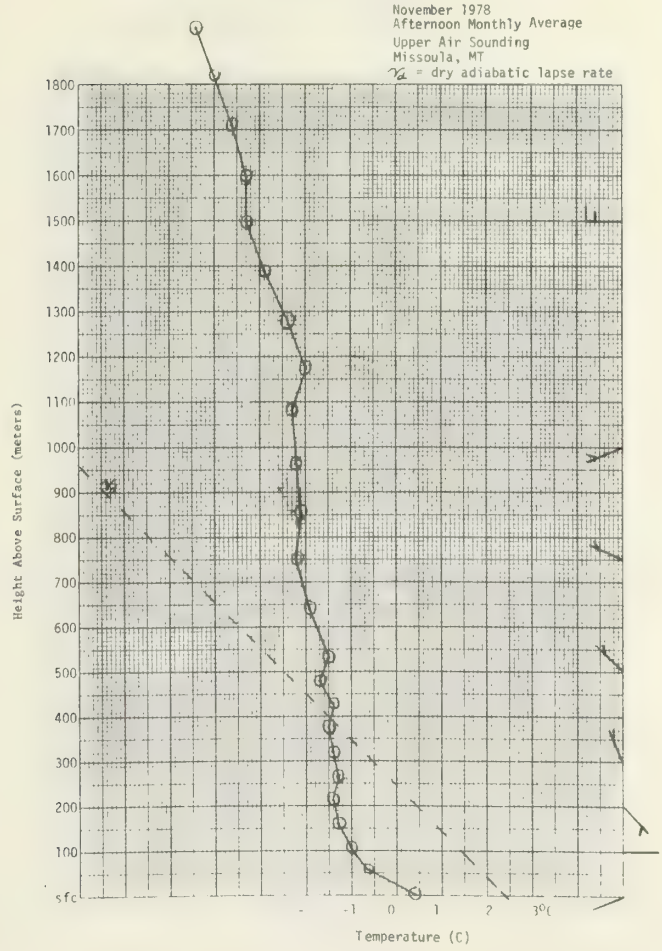

September 1978
Morning Monthly Average
Upper Air Sounding
Missoula, Montana
γ_a = dry adiabatic lapse rate
Height Above Surface (meters)
Temperature (C)

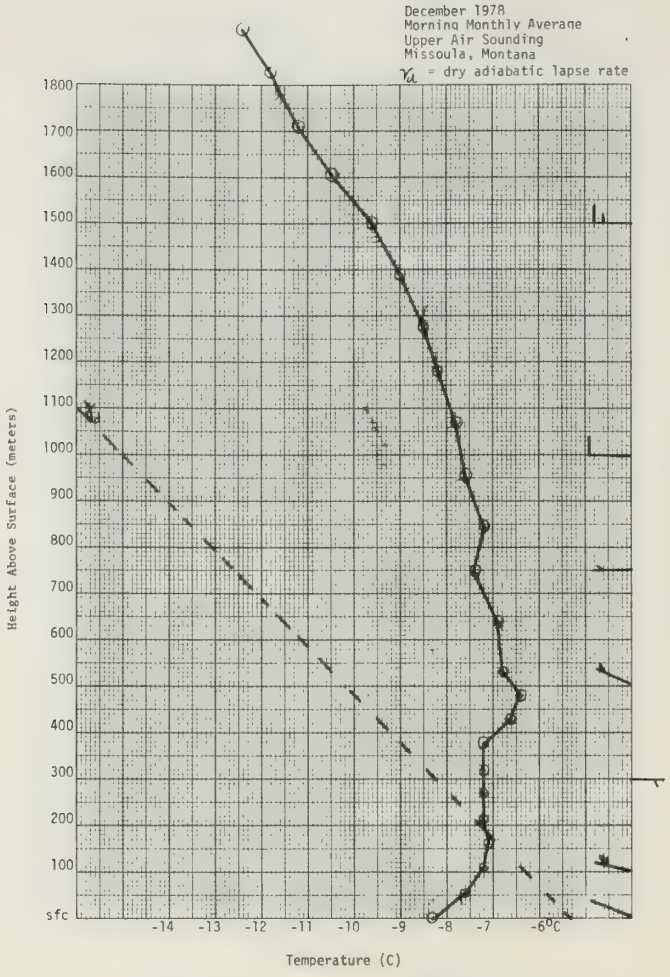

September 1978
Afternoon Monthly Average
Upper Air Sounding
Missoula, MT
γ_a = dry adiabatic lapse rate
Height Above Surface (meters)
Temperature (C)

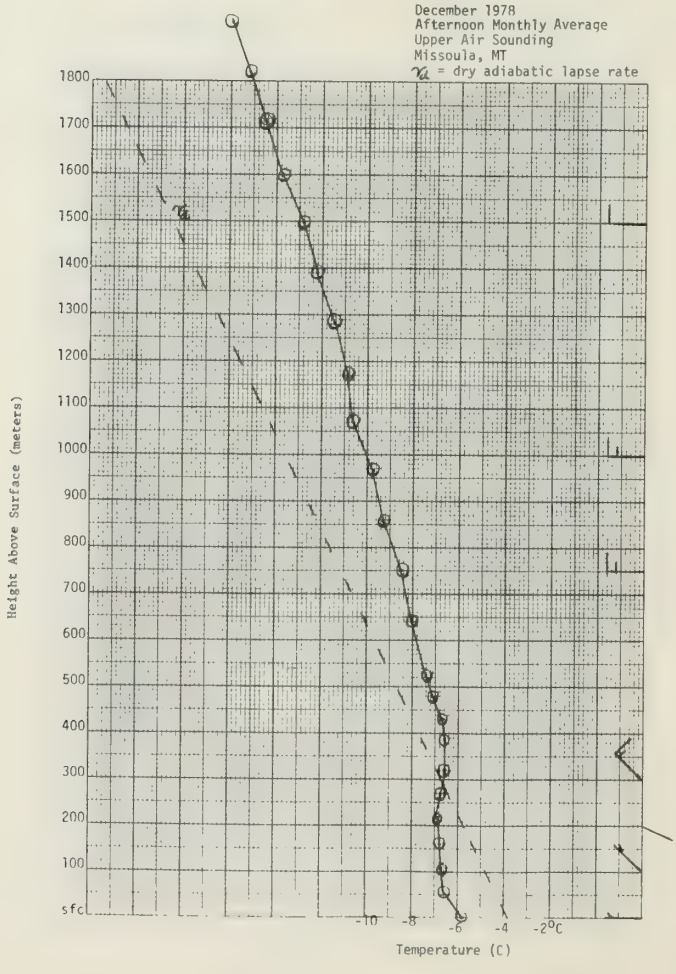

October 1978
Morning Monthly Average
Upper Air Sounding
Missoula, Montana
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-3
-2
-1
0
1
2
3°C
Temperature (C)

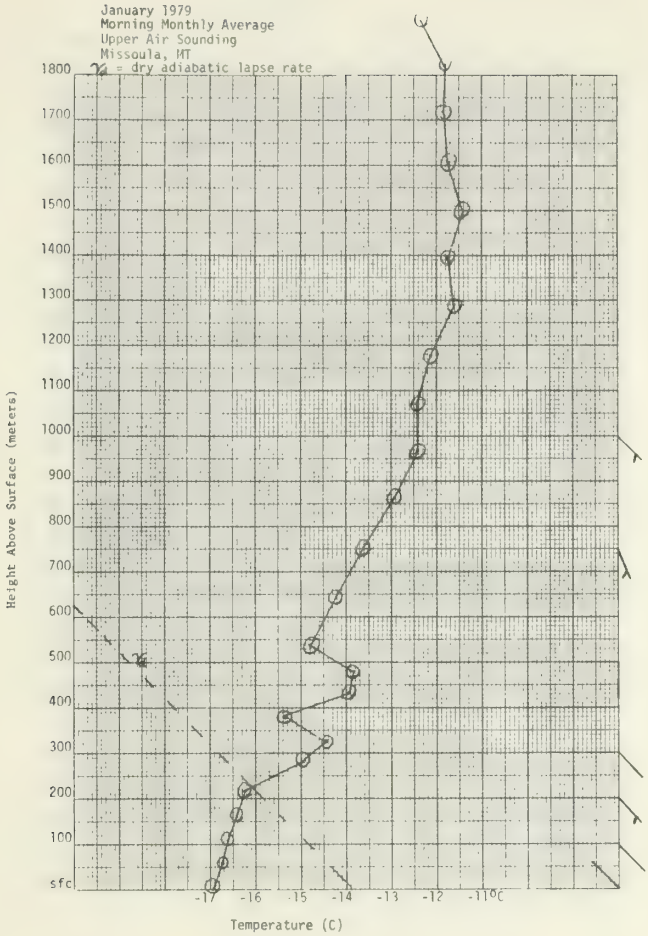

October 1978
Afternoon Monthly Average
Upper Air Sounding
Missoula, Montana
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
8°C
10
12
14
16
Temperature (C)

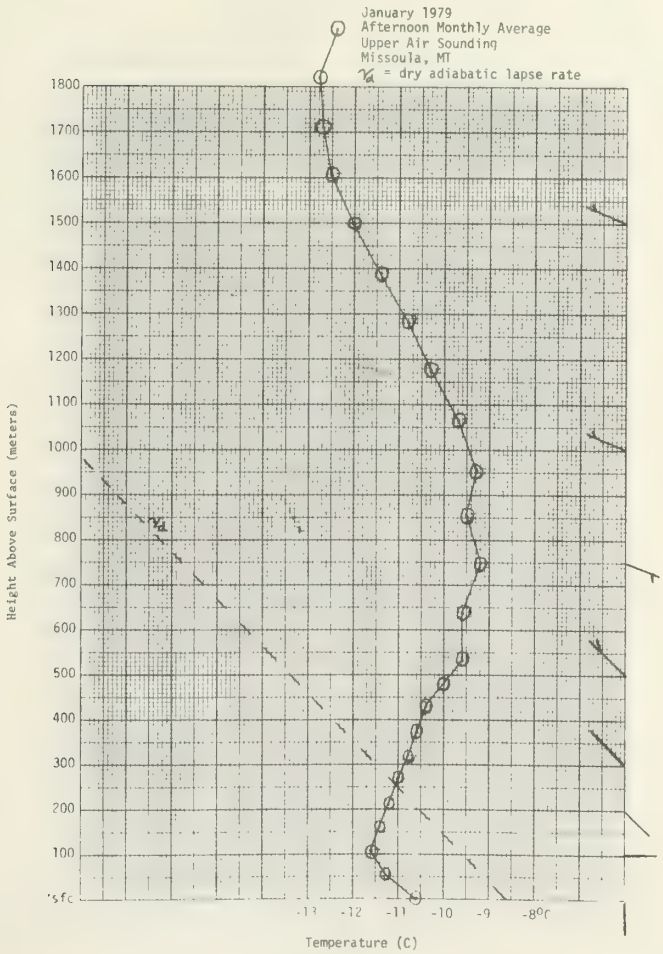

November 1978
Morning Monthly Average
Upper Air Sounding
Missoula, Montana
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-7
-6
-5
-4
-3
-2°C
Temperature (C)

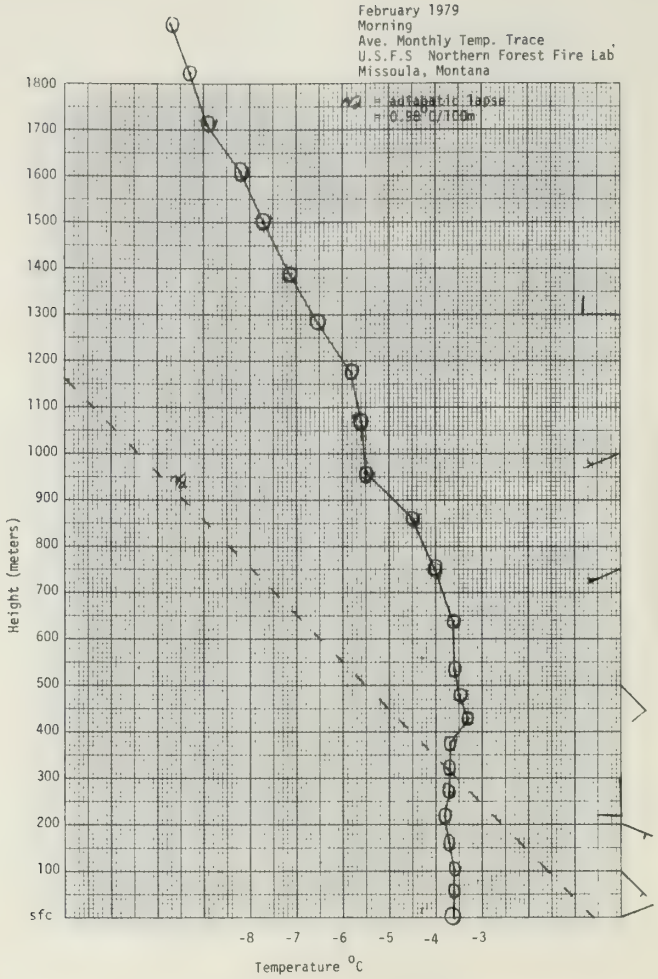

November 1978
Afternoon Monthly Average
Upper Air Sounding
Missoula, MT
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-1
0
1
2
3°C
Temperature (C)

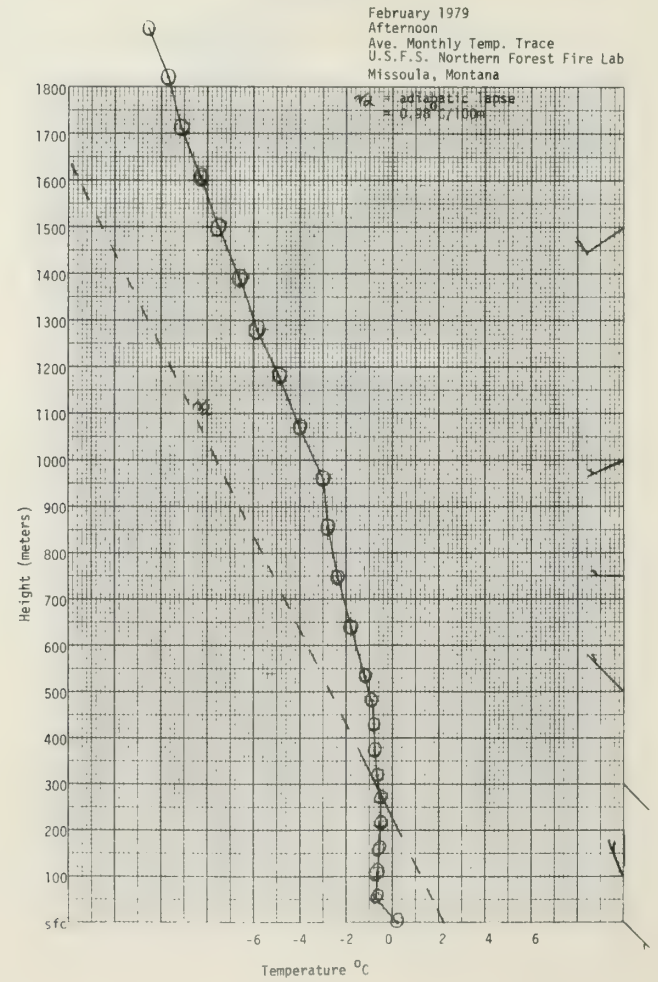

December 1978
Morning Monthly Average
Upper Air Sounding
Missoula, Montana
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-14 -13 -12 -11 -10 -9 -8 -7 -6°C
Temperature (C)

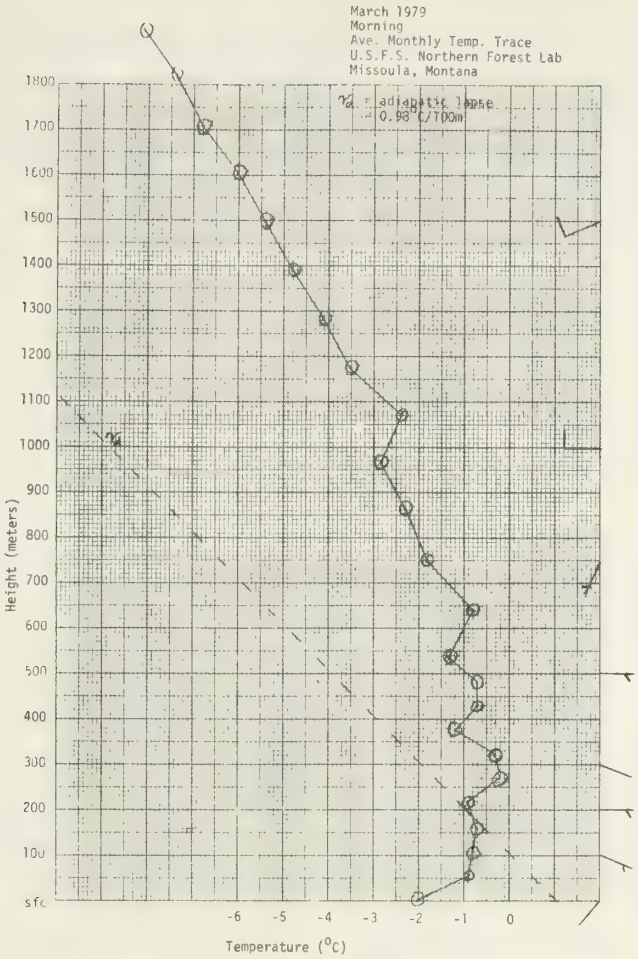

December 1978
Afternoon Monthly Average
Upper Air Sounding
Missoula, MT
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-10 -8 -6 -4 -2°C
Temperature (C)

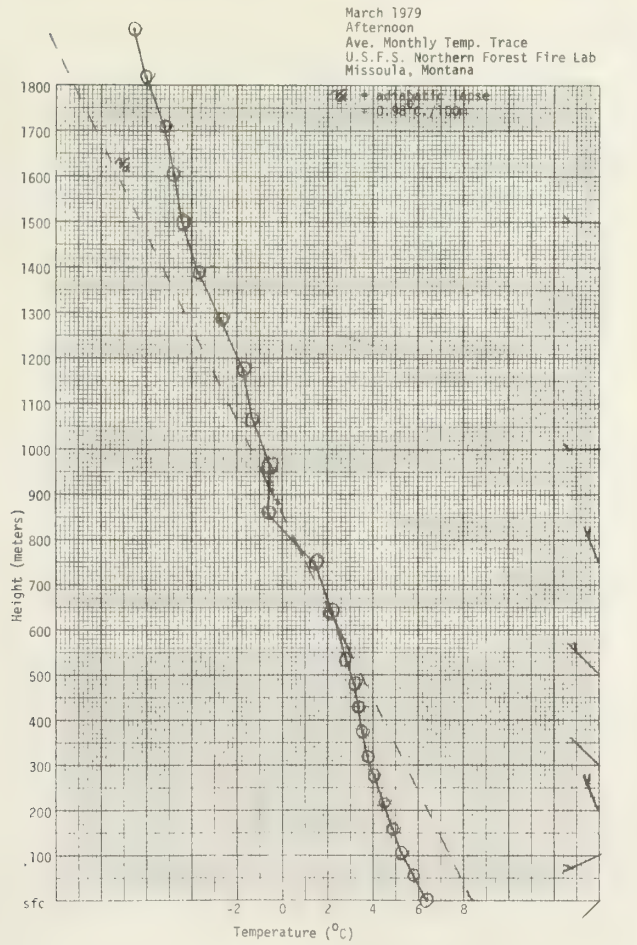

January 1979
Morning Monthly Average
Upper Air Sounding
Missoula, MT
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-17
-16
-15
-14
-13
-12
-11°C
Temperature (C)


January 1979
Afternoon Monthly Average
Upper Air Sounding
Missoula, MT
γ_d = dry adiabatic lapse rate
Height Above Surface (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-12
-11
-10
-9
-8°C
Temperature (C)


February 1979
Morning
Ave. Monthly Temp. Trace
U.S.F.S Northern Forest Fire Lab
Missoula, Montana
= adiabatic lapse
= 0.98°C/100m
Height (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-8 -7 -6 -5 -4 -3
Temperature °C


February 1979
Afternoon
Ave. Monthly Temp. Trace
U.S.F.S. Northern Forest Fire Lab
Missoula, Montana
= adiabatic lapse
= 0.98°C/100m
Height (meters)
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
sfc
-6 -4 -2 0 2 4 6
Temperature °C


March 1979
Morning
Ave. Monthly Temp. Trace
U.S.F.S. Northern Forest Lab
Missoula, Montana
γd = adiabatic lapse
= 0.98°C/100m
Height (meters)
sfc
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
-6
-5
-4
-3
-2
-1
0
Temperature (°C)


March 1979
Afternoon
Ave. Monthly Temp. Trace
U.S.F.S. Northern Forest Fire Lab
Missoula, Montana
γd = adiabatic lapse
= 0.98°C/100m
Height (meters)
sfc
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
-2
0
2
4
6
8
Temperature (°C)

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

SURFACE WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0						1	10.0	.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	20.0						2	20.0	1.0
WNW	10.0						1	10.0	1.8
NW	20.0						2	20.0	1.3
NNW							0	0.0	
CALM							3	30.0	
COL. TOTALS	70.0						10		.9

SURFACE WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	4.9
NNE	11.1						1	11.1	.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	5.8
SE							0	0.0	
SSE							0	0.0	
S	22.2						2	22.2	1.5
SSW							0	0.0	
SW	11.1						1	11.1	2.2
WSW							0	0.0	
W		11.1					1	11.1	5.4
WNW		22.2					2	22.2	4.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	55.5					9		3.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

100 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0						1	10.0	1.5
SSE							0	0.0	
S							0	0.0	
SSW	10.0						1	10.0	1.2
SW							0	0.0	
WSW							0	0.0	
W	10.0						1	10.0	.7
WNW		10.0					1	10.0	3.0
NW	20.0	10.0					3	30.0	1.9
NNW		20.0					2	20.0	4.8
CALM							0	0.0	
COL. TOTALS	60.0	40.0					10		2.4

100 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	1.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1					1	11.1	5.7
SSE	11.1						1	11.1	.9
S							0	0.0	
SSW							0	0.0	
SW		11.1					1	11.1	4.8
WSW							0	0.0	
W	11.1						1	11.1	1.6
WNW							0	0.0	
NW		11.1	11.1				2	22.2	5.3
NNW		11.1	11.1				2	22.2	5.9
CALM							0	0.0	
COL. TOTALS	33.3	44.4	22.2				9		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	20.0						2	20.0	2.1
SSW							0	0.0	
SW							0	0.0	
WSW	10.0						1	10.0	.9
W	10.0						1	10.0	1.5
WNW		10.0					1	10.0	3.9
NW		10.0					1	10.0	4.1
NNW	20.0	10.0					3	30.0	2.1
CALM							0	0.0	
COL. TOTALS	70.0	30.0					10		2.3

200 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	3.6
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	.3
SSW							0	0.0	
SW							0	0.0	
WSW	11.1	11.1					2	22.2	3.1
W							0	0.0	
WNW							0	0.0	
NW		22.2					2	22.2	4.5
NNW		11.1	11.1				2	22.2	6.5
CALM							0	0.0	
COL. TOTALS	33.3	55.5	11.1				9		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	1.6
SE							0	0.0	
SSE	11.1						1	11.1	1.2
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	11.1	11.1					2	22.2	2.7
WNW		22.2					2	22.2	4.6
NW	22.2						2	22.2	2.2
NNW	11.1						1	11.1	.3
CALM							0	0.0	
COL. TOTALS	66.6	33.3					9		2.4

300 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	11.1		11.1				2	22.2	4.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	3.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	11.1	11.1					2	22.2	3.7
W							0	0.0	
WNW	11.1	11.1					2	22.2	3.2
NW	11.1						1	11.1	2.0
NNW		11.1					1	11.1	4.4
CALM							0	0.0	
COL. TOTALS	44.4	44.4	11.1				9		3.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		12.5					1	12.5	5.2
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		12.5					1	12.5	3.9
SSW							0	0.0	
SW							0	0.0	
WSW		12.5					1	12.5	3.5
W	12.5	12.5		12.5			3	37.5	7.6
WNW							0	0.0	
NW	25.0						2	25.0	2.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	37.5	50.0		12.5			8		4.9

500 METER LEVEL WINDS AFTERNCON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	6.4
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						1	11.1	1.3
E							0	0.0	
ESE			11.1				1	11.1	6.6
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	1.0
W		22.2					2	22.2	5.0
WNW	22.2						2	22.2	1.8
NW			11.1				1	11.1	7.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	22.2	33.3				9		4.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			16.6				1	16.6	6.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		16.6	16.6				2	33.2	5.5
WSW				16.6			1	16.6	10.2
W			16.6				1	16.6	6.9
WNW							0	0.0	
NW		16.6					1	16.6	4.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.2	49.8	16.6			6		6.5

750 METER LEVEL WINDS AFTERNCON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	9.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			11.1				1	11.1	6.3
SE							0	0.0	
SSE	11.1						1	11.1	.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1					1	11.1	5.1
W	11.1	22.2	11.1				4	44.4	4.9
WNW			11.1				1	11.1	7.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	33.3	44.4				9		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			16.6				1	16.6	9.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				16.6			1	16.6	10.5
WSW			16.6				1	16.6	6.3
W			33.3				2	33.3	9.5
WNW							0	0.0	
NW		16.6					1	16.6	5.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		16.6	66.5	16.6			6		8.4

1000 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			11.1				1	11.1	6.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			11.1				1	11.1	7.7
SE							0	0.0	
SSE	11.1						1	11.1	.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			11.1				1	11.1	9.6
W	11.1	11.1	22.2				4	44.4	5.4
WNW			11.1				1	11.1	7.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	66.6				9		5.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			25.0				1	25.0	7.8
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	13.9
WSW							0	0.0	
W					50.0		2	50.0	20.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			25.0	25.0	50.0		4		15.4

1500 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE		14.2					1	14.2	3.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				14.2			1	14.2	12.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			14.2		14.2		2	28.4	12.7
W			28.5				2	28.5	6.5
WNW				14.2			1	14.2	13.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		14.2	42.7	28.4	14.2		7		9.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				50.0			1	50.0	10.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			50.0				1	50.0	6.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			50.0	50.0			2		8.4

2000 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				33.3			1	33.3	10.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			33.3				1	33.3	8.2
W				33.3			1	33.3	11.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	66.6			3		10.0

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MAY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

SURFACE WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	.9
NNE	8.3						1	8.3	1.8
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3	8.3					2	16.6	2.4
SSE							0	0.0	
S	16.6						2	16.6	.6
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	.9
NNW	8.3						1	8.3	1.8
CALM							4	33.0	
COL. TOTALS	58.1	8.3					12		.9

SURFACE WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.6					1	7.6	4.9
NNE		7.6					1	7.6	4.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	15.3						2	15.3	2.0
SSW							0	0.0	
SW		7.6					1	7.6	4.5
WSW	7.6						1	7.6	1.8
W	7.6	23.0					4	30.6	3.6
WNW	7.6						1	7.6	.9
NW							0	0.0	
NNW		7.6					1	7.6	3.6
CALM							1	7.0	
COL. TOTALS	38.1	53.4					13		2.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

100 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.3
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	2.1
E	8.3						1	8.3	.5
ESE	16.6						2	16.6	.8
SE		16.6					2	16.6	3.6
SSE	8.3						1	8.3	1.9
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW			8.3				1	8.3	7.6
NNW	25.0						3	25.0	1.3
CALM							0	0.0	
COL. TOTALS	66.5	24.9	8.3				12		2.3

100 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.6	15.3					3	22.9	3.4
NNE							0	0.0	
NE	7.6						1	7.6	2.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	7.6						1	7.6	2.6
W	23.0			15.3			5	38.3	5.9
WNW	7.6	7.6					2	15.2	3.0
NW		7.6					1	7.6	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	53.4	30.5		15.3			13		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3	8.3					2	16.6	2.4
ESE	8.3	16.6					3	24.9	3.8
SE	16.6						2	16.6	2.3
SSE			8.3				1	8.3	6.1
S							0	0.0	
SSW	8.3						1	8.3	1.5
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW					8.3		1	8.3	17.0
NNW	8.3	8.3					2	16.6	2.6
CALM							0	0.0	
COL. TOTALS	49.8	33.2	8.3		8.3		12		4.2

200 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			7.6				1	7.6	8.5
NNE	7.6	7.6	7.6				3	22.8	4.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	7.6						1	7.6	.5
WSW	7.6						1	7.6	.9
W	7.6	7.6			7.6		3	22.8	7.8
WNW	7.6	7.6					2	15.2	3.7
NW	7.6						1	7.6	2.7
NNW	7.6						1	7.6	2.1
CALM							0	0.0	
COL. TOTALS	53.2	22.8	15.2		7.6		13		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		16.6	8.3				3	24.9	5.1
SE	16.6	16.6					4	33.2	3.0
SSE		8.3					1	8.3	4.4
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	1.3
WSW							0	0.0	
W							0	0.0	
WNW	8.3						1	8.3	.8
NW				8.3			1	8.3	14.7
NNW		8.3					1	8.3	4.6
CALM							0	0.0	
COL. TOTALS	33.2	49.8	8.3	8.3			12		4.4

300 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.6	7.6		7.6		3	22.8	9.3
NNE			7.6				1	7.6	6.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	7.6						1	7.6	2.0
SE							0	0.0	
SSE	7.6						1	7.6	1.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	23.0			7.6			4	30.6	5.0
WNW							0	0.0	
NW	7.6						1	7.6	2.2
NNW	7.6	7.6					2	15.2	3.5
CALM							0	0.0	
COL. TOTALS	53.4	15.2	15.2	7.6	7.6		13		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		8.3					1	8.3	3.4
ESE	8.3	16.6	8.3				4	33.2	4.4
SE	8.3						1	8.3	2.5
SSE	16.6						2	16.6	1.4
S		8.3					1	8.3	4.9
SSW							0	0.0	
SW							0	0.0	
WSW		8.3					1	8.3	4.3
W							0	0.0	
WNW			8.3				1	8.3	7.3
NW							0	0.0	
NNW		8.3					1	8.3	3.0
CALM							0	0.0	
COL. TOTALS	33.2	49.8	16.6				12		3.8

500 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N			7.6	7.6			2	15.2	10.2
NNE							0	0.0	
NE	7.6	7.6					2	15.2	2.8
ENE							0	0.0	
E							0	0.0	
ESE		7.6					1	7.6	5.2
SE							0	0.0	
SSE							0	0.0	
S	7.6						1	7.6	2.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	7.6				7.6		2	15.2	13.3
WNW	7.6						1	7.6	1.8
NW		7.6					1	7.6	5.7
NNW	7.6	15.3					3	22.9	3.3
CALM							0	0.0	
COL. TOTALS	38.0	38.1	7.6	7.6	7.6		13		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	9.0	18.1	18.1				5	45.2	5.1
SE	9.0		9.0				2	18.0	4.8
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0						1	9.0	2.5
WSW							0	0.0	
W							0	0.0	
WNW				9.0			1	9.0	14.2
NW							0	0.0	
NNW	9.0	9.0					2	18.0	2.4
CALM							0	0.0	
COL. TOTALS	36.0	27.1	27.1	9.0			11		5.1

750 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	7.6						1	7.6	1.0
NNE							0	0.0	
NE		7.6					1	7.6	3.7
ENE							0	0.0	
E		7.6					1	7.6	5.0
ESE		15.3					2	15.3	4.8
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		7.6					1	7.6	5.6
SW							0	0.0	
WSW		7.6					1	7.6	5.1
W	7.6	15.3	7.6				4	30.5	3.8
WNW							0	0.0	
NW		7.6	7.6				2	15.2	6.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	15.2	68.6	15.2				13		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	5.4
ESE	9.0	18.1					3	27.1	3.7
SE				9.0			1	9.0	11.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	9.0						1	9.0	2.6
W			27.2				3	27.2	8.3
WNW	18.1						2	18.1	2.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.1	27.1	27.2	9.0			11		5.5

1000 METER LEVEL WINDS AFTERNCON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		7.6	7.6				2	15.2	4.8
ESE	15.3	7.6					3	22.9	2.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		7.6					1	7.6	4.3
W		15.3	7.6				3	22.9	5.0
WNW	7.6	7.6					2	15.2	3.8
NW			15.3				2	15.3	7.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.9	45.7	30.5				13		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1500 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		10.0					1	10.0	3.2
ESE							0	0.0	
SE			10.0				1	10.0	9.8
SSE			10.0				1	10.0	9.6
S			10.0				1	10.0	7.4
SSW	10.0						1	10.0	.3
SW	10.0						1	10.0	1.4
WSW	10.0						1	10.0	2.3
W				10.0			1	10.0	11.1
WNW		10.0					1	10.0	4.7
NW	10.0						1	10.0	2.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	20.0	30.0	10.0			10		5.2

1500 METER LEVEL WINDS AFTERNCON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.7
NE							0	0.0	
ENE							0	0.0	
E		8.3					1	8.3	4.6
ESE		8.3					1	8.3	5.9
SE							0	0.0	
SSE							0	0.0	
S			8.3				1	8.3	7.9
SSW							0	0.0	
SW							0	0.0	
WSW			8.3				1	8.3	8.9
W		25.0	8.3	8.3			5	41.6	7.2
WNW		8.3					1	8.3	5.9
NW		8.3					1	8.3	3.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	58.2	24.9	8.3			12		6.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE			11.1				1	11.1	6.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			11.1	11.1			2	22.2	9.3
S							0	0.0	
SSW							0	0.0	
SW			11.1	11.1			2	22.2	10.0
WSW			11.1				1	11.1	7.1
W			11.1	11.1			2	22.2	9.4
WNW				11.1			1	11.1	12.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			55.5	44.4			9		9.3

2000 METER LEVEL WINDS AFTERNOON JUNE,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1		11.1			2	22.2	8.1
SSE							0	0.0	
S			11.1				1	11.1	9.2
SSW							0	0.0	
SW							0	0.0	
WSW			11.1				1	11.1	6.7
W			11.1	11.1			2	22.2	11.7
WNW			11.1	22.2			3	33.3	11.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		11.1	44.4	44.4			9		9.9

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JUNE 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-00.00

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	7.6						1	7.6	.9
SSE							0	0.0	
S	7.6						1	7.6	.9
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	15.3						2	15.3	1.1
WNW							0	0.0	
NW	15.3						2	15.3	.8
NNW	7.6						1	7.6	.9
CALM							6	46.0	
COL. TOTALS	53.4						13		.5

SURFACE WINDS AFTERNOON JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						2	16.6	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	2.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						3	25.0	1.1
WSW	8.3						1	8.3	2.2
W	16.6						2	16.6	1.7
WNW							0	0.0	
NW		8.3	8.3				2	16.6	6.7
NNW							0	0.0	
CALM							1	8.0	
COL. TOTALS	74.8	8.3	8.3				12		2.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

100 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	7.6	7.6					2	15.2	3.5
SE	7.6						1	7.6	1.9
SSE	15.3						2	15.3	2.5
S	7.6						1	7.6	1.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	7.6						1	7.6	1.0
WNW	7.6						1	7.6	1.5
NW	7.6						1	7.6	2.5
NNW	15.3	15.3					4	30.6	2.6
CALM							0	0.0	
COL. TOTALS	76.2	22.9					13		2.3

100 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3	8.3					2	16.6	2.6
NNE			8.3				1	8.3	6.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	1.3
SE							0	0.0	
SSE			8.3				1	8.3	8.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	33.3						4	33.3	1.7
NW							0	0.0	
NNW	8.3	8.3			8.3		3	24.9	7.4
CALM							0	0.0	
COL. TOTALS	58.2	16.6	16.6		8.3		12		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.6						1	7.6	1.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		7.6					1	7.6	5.3
SE	15.3	15.3					4	30.6	3.2
SSE	7.6						1	7.6	1.0
S							0	0.0	
SSW	7.6						1	7.6	2.4
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	7.6						1	7.6	1.1
NW	15.3		7.6				3	22.9	2.7
NNW	7.6						1	7.6	2.7
CALM							0	0.0	
COL. TOTALS	68.6	22.9	7.6				13		2.6

200 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3		8.3				2	16.6	5.7
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	8.3		8.3				2	16.6	5.1
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	16.6	16.6					4	33.2	2.6
NW	8.3	8.3				8.3	3	24.9	10.1
NNW	8.3						1	8.3	1.3
CALM							0	0.0	
COL. TOTALS	49.8	24.9	16.6			8.3	12		5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	7.6						1	7.6	1.8
NE							0	0.0	
ENE							0	0.0	
E		7.6					1	7.6	3.4
ESE		23.0					3	23.0	4.7
SE		7.6	7.6				2	15.2	5.5
SSE		7.6					1	7.6	3.5
S	7.6						1	7.6	2.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	23.0	7.6					4	30.6	2.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	38.2	53.4	7.6				13		3.6

300 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3	8.3				2	16.6	5.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE				8.3			1	8.3	13.8
SSE							0	0.0	
S		8.3					1	8.3	4.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	25.0	8.3					4	33.3	2.6
NW					8.3		1	8.3	21.8
NNW	25.0						3	25.0	1.7
CALM							0	0.0	
COL. TOTALS	50.0	24.9	8.3	8.3	8.3		12		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.4
NNE							0	0.0	
NE		8.3					1	8.3	3.8
ENE	8.3						1	8.3	.5
E	8.3						1	8.3	2.5
ESE		8.3	16.6	8.3			4	33.2	7.5
SE		8.3					1	8.3	5.0
SSE		8.3					1	8.3	4.4
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	2.8
WNW							0	0.0	
NW			8.3				1	8.3	6.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	33.2	24.9	8.3			12		4.8

500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE				8.3			1	8.3	15.4
S	8.3						1	8.3	1.6
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	1.7
WNW	16.6						2	16.6	1.1
NW	8.3	16.6			8.3		4	33.2	8.1
NNW	16.6	8.3					3	24.9	2.6
CALM							0	0.0	
COL. TOTALS	58.1	24.9		8.3	8.3		12		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	8.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			8.3				1	8.3	6.2
ESE			25.0	8.3			4	33.3	9.6
SE		8.3					1	8.3	4.0
SSE		8.3					1	8.3	4.1
S		16.6					2	16.6	5.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		8.3					1	8.3	5.5
WNW		8.3					1	8.3	3.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		49.8	41.6	8.3			12		6.6

750 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3	8.3					2	16.6	3.0
NNE							0	0.0	
NE	8.3						1	8.3	2.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	1.8
WSW							0	0.0	
W		8.3					1	8.3	5.6
WNW		8.3	16.6				3	24.9	5.8
NW	8.3	16.6		8.3			4	33.2	5.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	41.5	16.6	8.3			12		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0	9.0				2	18.0	5.7
ESE		9.0			9.0		2	18.0	13.7
SE		9.0					1	9.0	4.0
SSE	9.0	9.0					2	18.0	3.5
S							0	0.0	
SSW							0	0.0	
SW	9.0						1	9.0	.5
WSW	9.0						1	9.0	2.9
W			9.0				1	9.0	6.6
WNW		9.0					1	9.0	4.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	45.0	18.0		9.0		11		5.8

1000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.0
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		8.3					1	8.3	4.2
SW							0	0.0	
WSW							0	0.0	
W		8.3	8.3				2	16.6	5.8
WNW	8.3	8.3	8.3		8.3		4	33.2	8.4
NW	16.6	16.6					4	33.2	3.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	41.5	16.6		8.3		12		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				9.0			1	9.0	10.1
SE			9.0	9.0			2	18.0	9.0
SSE							0	0.0	
S	9.0						1	9.0	1.8
SSW							0	0.0	
SW							0	0.0	
WSW		9.0	9.0				2	18.0	5.4
W	9.0		9.0				2	18.0	3.5
WNW			9.0	18.1			3	27.1	10.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	9.0	36.0	36.1			11		7.3

1500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	8.3						1	8.3	.7
SSW							0	0.0	
SW	16.6			8.3			3	24.9	4.2
WSW		8.3		8.3			2	16.6	8.6
W		8.3	16.6				3	24.9	6.3
WNW		8.3					1	8.3	3.0
NW		8.3					1	8.3	4.7
NNW				8.3			1	8.3	10.3
CALM							0	0.0	
COL. TOTALS	24.9	33.2	16.6	24.9			12		5.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		12.5	12.5				2	25.0	7.1
SSE							0	0.0	
S				12.5			1	12.5	12.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		12.5	12.5				2	25.0	5.4
WNW		12.5			12.5		2	25.0	11.8
NW			12.5				1	12.5	6.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		37.5	37.5	12.5	12.5		8		8.4

2000 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		14.2					1	14.2	5.7
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			14.2				1	14.2	9.1
W			14.2	14.2			2	28.4	10.2
WNW							0	0.0	
NW	28.5			14.2			3	42.7	4.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.5	14.2	28.4	28.4			7		7.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MONTH OF JULY 1978 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	5.7		11.4	8.5	2.8	2.8	8.5	8.5				48.2
101-250	11.4	2.8	2.8	8.5	2.8	8.5						36.8
251-500	2.8			2.8	5.7							11.3
501-750												
TOTAL	19.9	2.8	14.2	19.8	11.3	11.3	8.5	8.5				
NO INVERSION												2.0
								TOTAL NO. OF OCCURENCES				34

INVERSION TYPE												
1				2.9	2.9		2.9	2.9				11.6
2	2.9		11.7	14.7	8.8	8.8	5.8	5.8				58.5
3	11.7	2.9	2.9	2.9		2.9						23.3
4	2.9											2.9
5	2.9											2.9

MONTH OF JULY 1978 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	14.2			14.2			14.2	28.5				71.1
101-250												
251-500												
501-750												
TOTAL	14.2			14.2			14.2	28.5				
NO INVERSION												28.0
								TOTAL NO. OF OCCURENCES				5

INVERSION TYPE												
1							20.0	40.0				60.0
2				20.0								20.0
3	20.0											20.0
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JULY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	3	0
101- 250	5	0
251- 500	0	1
501- 750	1	2
751-1000	0	0
1001-1500	0	0
>1500	0	2
TOTAL	9	5
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.0	4.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-01.06

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						2	16.6	.4
NNE							0	0.0	
NE	16.6						2	16.6	.4
ENE							0	0.0	
E	16.6	8.3					3	24.9	2.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							4	33.0	
COL. TOTALS	58.1	8.3					12		.8

SURFACE WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	1.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	18.1						2	18.1	1.3
SSW	9.0						1	9.0	1.8
SW	9.0						1	9.0	.9
WSW			9.0				1	9.0	7.7
W	18.1						2	18.1	.7
WNW							0	0.0	
NW		9.0					1	9.0	3.1
NNW			9.0				1	9.0	6.7
CALM							0	0.0	
COL. TOTALS	72.2	9.0	18.0				11		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

100 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						3	25.0	.9
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	.8
E			8.3				1	8.3	8.6
ESE	8.3						1	8.3	1.8
SE	16.6	8.3					3	24.9	2.1
SSE	8.3						1	8.3	1.4
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	.6
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	1.6
CALM							0	0.0	
COL. TOTALS	83.1	8.3	8.3				12		2.0

100 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	4.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	2.8
SSE							0	0.0	
S							0	0.0	
SSW	9.0	18.1					3	27.1	3.3
SW							0	0.0	
WSW							0	0.0	
W	27.2						3	27.2	2.0
WNW		9.0					1	9.0	3.1
NW							0	0.0	
NNW		9.0	9.0				2	18.0	5.1
CALM							0	0.0	
COL. TOTALS	45.2	45.1	9.0				11		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

200 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	.9
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	1.6
E	8.3			8.3			2	16.6	5.3
ESE	8.3	8.3					2	16.6	3.4
SE	16.6	8.3					3	24.9	2.7
SSE	16.6						2	16.6	1.9
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	2.2
CALM							0	0.0	
COL. TOTALS	74.7	16.6		8.3			12		2.8

200 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.8
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	2.8
SSE							0	0.0	
S	9.0						1	9.0	1.8
SSW							0	0.0	
SW							0	0.0	
WSW	9.0						1	9.0	2.2
W	9.0	9.0					2	18.0	2.7
WNW		9.0					1	9.0	3.0
NW	9.0		9.0				2	18.0	5.2
NNW		9.0	9.0				2	18.0	7.0
CALM							0	0.0	
COL. TOTALS	54.0	27.0	18.0				11		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	16.6	8.3					3	24.9	2.6
ESE	16.6	16.6					4	33.2	2.8
SE							0	0.0	
SSE	8.3	16.6					3	24.9	3.2
S		8.3					1	8.3	5.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	1.9
CALM							0	0.0	
COL. TOTALS	49.8	49.8					12		2.9

300 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.8
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	1.5
S							0	0.0	
SSW	9.0						1	9.0	.4
SW							0	0.0	
WSW	9.0	9.0					2	18.0	2.8
W		9.0					1	9.0	4.1
WNW		9.0					1	9.0	3.5
NW	18.1	18.1					4	36.2	3.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	54.1	45.1					11		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	1.4
ESE		25.0	8.3				4	33.3	5.5
SE		16.6					2	16.6	3.7
SSE							0	0.0	
S		8.3					1	8.3	5.3
SSW		8.3					1	8.3	3.5
SW	8.3						1	8.3	1.8
WSW	8.3						1	8.3	2.7
W	8.3						1	8.3	1.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	58.2	8.3				12		3.8

500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	5.2
NNE	9.0						1	9.0	.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	.5
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	3.8
W							0	0.0	
WNW		9.0					1	9.0	3.3
NW	27.2	9.0					4	36.2	2.8
NNW	9.0	9.0					2	18.0	2.6
CALM							0	0.0	
COL. TOTALS	54.2	45.0					11		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

750 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				8.3			1	8.3	11.3
SE	8.3	8.3					2	16.6	3.2
SSE							0	0.0	
S		33.3					4	33.3	5.2
SSW	8.3						1	8.3	2.4
SW							0	0.0	
WSW	8.3		8.3				2	16.6	4.3
W							0	0.0	
WNW	8.3						1	8.3	2.8
NW							0	0.0	
NNW	8.3						1	8.3	2.8
CALM							0	0.0	
COL. TOTALS	41.5	41.6	8.3	8.3			12		4.6

750 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	6.8
NNE							0	0.0	
NE	9.0						1	9.0	1.6
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0					1	9.0	3.1
W							0	0.0	
WNW	9.0	27.2					4	36.2	3.0
NW		9.0	9.0				2	18.0	6.2
NNW	18.1						2	18.1	.7
CALM							0	0.0	
COL. TOTALS	36.1	45.2	18.0				11		3.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			10.0				1	10.0	8.2
SE		10.0					1	10.0	3.2
SSE	10.0		10.0				2	20.0	4.4
S			10.0				1	10.0	6.9
SSW		10.0					1	10.0	3.7
SW							0	0.0	
WSW			10.0				1	10.0	8.1
W		10.0					1	10.0	3.0
WNW			10.0				1	10.0	7.9
NW	10.0						1	10.0	2.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	30.0	50.0				10		5.2

1000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	9.0	9.0					2	18.0	3.3
WSW			9.0				1	9.0	7.7
W		9.0					1	9.0	3.2
WNW							0	0.0	
NW	27.2	18.1					5	45.3	2.8
NNW			9.0				1	9.0	7.4
CALM							0	0.0	
COL. TOTALS	45.2	36.1	18.0				11		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	12.5						1	12.5	1.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		12.5					1	12.5	4.5
SE							0	0.0	
SSE	12.5						1	12.5	2.1
S		12.5					1	12.5	4.5
SSW							0	0.0	
SW							0	0.0	
WSW			25.0				2	25.0	8.1
W		12.5					1	12.5	4.7
WNW				12.5			1	12.5	11.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	37.5	25.0	12.5			8		5.6

1500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				10.0			1	10.0	10.5
WSW		10.0	10.0				2	20.0	6.7
W		10.0	10.0				2	20.0	6.8
WNW			20.0				2	20.0	6.3
NW		30.0					3	30.0	4.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	40.0	10.0			10		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			12.5				1	12.5	8.1
SW	12.5						1	12.5	2.2
WSW	12.5	12.5		12.5			3	37.5	6.1
W			25.0				2	25.0	7.4
WNW				12.5			1	12.5	13.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	12.5	37.5	25.0			8		7.1

2000 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				10.0	10.0		2	20.0	16.1
WSW			10.0				1	10.0	7.7
W			30.0				3	30.0	8.1
WNW		10.0	20.0				3	30.0	6.0
NW		10.0					1	10.0	5.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		20.0	60.0	10.0	10.0		10		8.7

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MONTH OF AUGUST 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	INVERSION BASE HEIGHT (METERS) 251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	2.2	4.4	6.6	11.1		13.3	6.6	2.2				46.4
101-250	8.8		4.4	8.8	11.1	2.2	6.6	2.2				44.1
251-500	2.2			2.2				2.2				6.6
501-750	2.2											2.2
TOTAL	15.4	4.4	11.0	22.1	11.1	15.5	13.2	6.6				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				45

INVERSION TYPE												
1		4.4	4.4	13.3	4.4	6.6	8.8	4.4				46.3
2	4.4		4.4	6.6	6.6	8.8	4.4					35.2
3	8.8		2.2	2.2				2.2				15.4
4	2.2											2.2
5												

MONTH OF AUGUST 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	INVERSION BASE HEIGHT (METERS) 251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	5.8		11.7		5.8	5.8	11.7	23.5	5.8	5.8		75.9
101-250						5.8		5.8				11.6
251-500								5.8				5.8
501-750												
TOTAL	5.8		11.7		5.8	11.6	11.7	35.1	5.8	5.8		
NO INVERSION												5.0
								TOTAL NO. OF OCCURENCES				16

INVERSION TYPE												
1			6.2		6.2		6.2	37.5	6.2			62.3
2	6.2		6.2			12.5	6.2					31.1
3										6.2		6.2
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR AUGUST 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	5	1
251- 500	3	3
501- 750	0	1
751-1000	1	1
1001-1500	0	0
>1500	0	3
TOTAL	11	9

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.2	3.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.69	-01.26

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.9
ENE							0	0.0	
E	20.0						2	20.0	.4
ESE							0	0.0	
SE	20.0						2	20.0	1.8
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	20.0						2	20.0	.8
WNW							0	0.0	
NW	10.0						1	10.0	1.8
NNW							0	0.0	
CALM							2	20.0	
COL. TOTALS	80.0						10		.8

SURFACE WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0		20.0				3	30.0	5.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	20.0	30.0					5	50.0	2.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							1	10.0	
COL. TOTALS	40.0	30.0	20.0				10		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

100 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	30.0						3	30.0	1.3
SE	10.0						1	10.0	1.8
SSE	20.0						2	20.0	1.3
S		10.0					1	10.0	5.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		10.0					1	10.0	5.7
NNW	10.0	10.0					2	20.0	3.8
CALM							0	0.0	
COL. TOTALS	70.0	30.0					10		2.7

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			10.0	10.0			2	20.0	8.8
NNE	10.0						1	10.0	1.9
NE							0	0.0	
ENE	10.0						1	10.0	1.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	10.0						1	10.0	.2
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	10.0						1	10.0	2.9
NW	10.0	20.0					3	30.0	4.3
NNW			10.0				1	10.0	7.3
CALM							0	0.0	
COL. TOTALS	30.0	20.0	20.0	10.0			10		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

200 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		10.0					1	10.0	4.6
SE	20.0	10.0					3	30.0	2.3
SSE	10.0	10.0					2	20.0	2.6
S		10.0					1	10.0	3.9
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			10.0				1	10.0	9.4
NW							0	0.0	
NNW			10.0				1	10.0	7.7
CALM							0	0.0	
COL. TOTALS	40.0	40.0	20.0				10		3.9

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	3.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0						1	10.0	1.4
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	20.0						2	20.0	2.0
NW	20.0		10.0				3	30.0	3.8
NNW	10.0		20.0				3	30.0	5.7
CALM							0	0.0	
COL. TOTALS	60.0	10.0	30.0				10		3.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.5
ENE							0	0.0	
E							0	0.0	
ESE			10.0				1	10.0	6.0
SE		20.0					2	20.0	3.9
SSE	20.0	10.0					3	30.0	2.3
S		10.0					1	10.0	3.6
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			10.0				1	10.0	9.7
NW							0	0.0	
NNW				10.0			1	10.0	11.3
CALM							0	0.0	
COL. TOTALS	30.0	40.0	20.0	10.0			10		4.5

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	4.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	10.0						1	10.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW		20.0					2	20.0	4.3
NW		20.0	10.0	10.0			4	40.0	7.4
NNW	10.0		10.0				2	20.0	5.1
CALM							0	0.0	
COL. TOTALS	20.0	50.0	20.0	10.0			10		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		10.0					1	10.0	3.2
SE		10.0					1	10.0	3.7
SSE	10.0						1	10.0	1.0
S	10.0	20.0	10.0				4	40.0	4.3
SSW							0	0.0	
SW	10.0						1	10.0	.7
WSW							0	0.0	
W							0	0.0	
WNW				10.0			1	10.0	11.6
NW							0	0.0	
NNW				10.0			1	10.0	11.4
CALM							0	0.0	
COL. TOTALS	30.0	40.0	10.0	20.0			10		4.9

500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.2
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	10.0						1	10.0	1.4
SW		10.0					1	10.0	4.6
WSW							0	0.0	
W							0	0.0	
WNW		10.0	10.0				2	20.0	5.9
NW				20.0			2	20.0	11.3
NNW	10.0		10.0	10.0			3	30.0	8.2
CALM							0	0.0	
COL. TOTALS	30.0	20.0	20.0	30.0			10		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

750 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			11.1				1	11.1	7.6
SE		11.1					1	11.1	4.2
SSE		11.1					1	11.1	5.5
S							0	0.0	
SSW		11.1					1	11.1	4.2
SW							0	0.0	
WSW							0	0.0	
W	22.2						2	22.2	1.4
WNW		11.1		11.1			2	22.2	8.1
NW							0	0.0	
NNW				11.1			1	11.1	11.5
CALM							0	0.0	
COL. TOTALS	22.2	44.4	11.1	22.2			9		5.8

750 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		11.1					1	11.1	3.5
WSW			11.1				1	11.1	6.7
W		11.1					1	11.1	4.6
WNW		11.1	11.1	11.1			3	33.3	7.6
NW							0	0.0	
NNW		22.2	11.1				3	33.3	5.1
CALM							0	0.0	
COL. TOTALS		55.5	33.3	11.1			9		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1	11.1	11.1				3	33.3	4.4
S		11.1					1	11.1	4.7
SSW							0	0.0	
SW				11.1			1	11.1	15.6
WSW		11.1					1	11.1	3.7
W		11.1					1	11.1	4.4
WNW				11.1			1	11.1	10.7
NW							0	0.0	
NNW				11.1			1	11.1	13.5
CALM							0	0.0	
COL. TOTALS	11.1	44.4	11.1	33.3			9		7.3

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		11.1	22.2				3	33.3	6.7
W	11.1	11.1					2	22.2	3.9
WNW		11.1		11.1			2	22.2	7.7
NW		11.1		11.1			2	22.2	7.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	44.4	22.2	22.2			9		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			40.0				2	40.0	8.0
WSW			20.0	20.0			2	40.0	11.2
W			20.0				1	20.0	7.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			80.0	20.0			5		9.1

1500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		12.5		37.5			4	50.0	9.7
W			12.5	12.5			2	25.0	11.3
WNW	12.5	12.5					2	25.0	2.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	25.0	12.5	50.0			8		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

2000 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			20.0				1	20.0	9.7
WSW				40.0			2	40.0	14.5
W				20.0			1	20.0	10.0
WNW							0	0.0	
NW			20.0				1	20.0	9.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			40.0	60.0			5		11.7

2000 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		12.5	12.5				2	25.0	6.0
SW			12.5				1	12.5	5.0
WSW				12.5	12.5		2	25.0	15.9
W						12.5	1	12.5	36.0
WNW			12.5				1	12.5	7.7
NW		12.5					1	12.5	3.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	37.5	12.5	12.5	12.5	8		12.5

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MONTH OF SEPTEMBER 1978 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
INVERSION BASE HEIGHT (METERS)												
001-100			7.4	7.4	3.7		7.4	3.7				29.6
101-250	3.7	3.7	7.4	7.4	11.1	11.1	7.4					51.8
251-500	3.7			3.7								7.4
501-750												
TOTAL	7.4	3.7	14.8	18.5	14.8	11.1	14.8	3.7				
NO INVERSION												11.0
TOTAL NO. OF OCCURENCES												24
INVERSION TYPE												
1	4.1		4.1	8.3	4.1	4.1	8.3	4.1				37.1
2	4.1	4.1	8.3	4.1	12.5	8.3	8.3					49.7
3			4.1	8.3								12.4
4												
5												

MONTH OF SEPTEMBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
INVERSION BASE HEIGHT (METERS)												
001-100		7.1		14.2	7.1			14.2				42.6
101-250			7.1		7.1			21.4				35.6
251-500												
501-750												
TOTAL		7.1	7.1	14.2	14.2			35.6				
NO INVERSION												21.0
TOTAL NO. OF OCCURENCES												11
INVERSION TYPE												
1		9.0	9.0	18.1	18.1			18.1				72.3
2								18.1				18.1
3								9.0				9.0
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR SEPTEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	1	0
101- 250	2	0
251- 500	3	2
501- 750	3	3
751-1000	1	0
1001-1500	0	1
>1500	0	4
TOTAL	10	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.9	6.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.56	-00.96

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

SURFACE WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						3	16.6	1.0
NNE	11.1						2	11.1	.4
NE	11.1						2	11.1	.9
ENE	5.5						1	5.5	.2
E	11.1						2	11.1	.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	5.5						1	5.5	1.3
WSW							0	0.0	
W	5.5						1	5.5	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							6	33.0	
COL. TOTALS	66.4						18		.5

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3						1	8.3	.4
ENE							0	0.0	
E	16.6						2	16.6	1.3
ESE							0	0.0	
SE	16.6						2	16.6	1.1
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						3	25.0	1.1
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	8.3						1	8.3	2.2
CALM							3	25.0	
COL. TOTALS	74.8						12		.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

100 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	5.5						1	5.5	.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	5.5						1	5.5	1.7
ESE	16.6						3	16.6	1.9
SE	11.1						2	11.1	1.0
SSE	16.6						3	16.6	1.0
S	5.5						1	5.5	.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	5.5		5.5				2	11.0	3.2
WNW	5.5						1	5.5	1.2
NW	11.1						2	11.1	1.5
NNW	11.1						2	11.1	1.5
CALM							0	0.0	
COL. TOTALS	94.0		5.5				18		1.5

100 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	.8
SSE	16.6						2	16.6	1.0
S	8.3						1	8.3	1.7
SSW	8.3						1	8.3	.1
SW	8.3						1	8.3	.5
WSW	8.3		8.3				2	16.6	3.8
W							0	0.0	
WNW	8.3						1	8.3	.6
NW	8.3						1	8.3	1.0
NNW		8.3					1	8.3	3.2
CALM							0	0.0	
COL. TOTALS	83.0	8.3	8.3				12		1.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	5.5						1	5.5	.7
ENE							0	0.0	
E		5.5					1	5.5	4.2
ESE	5.5	5.5	5.5				3	16.5	4.0
SE		16.6					3	16.6	3.3
SSE							0	0.0	
S	16.6						3	16.6	1.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				5.5			1	5.5	10.3
WNW	5.5	5.5					2	11.0	1.8
NW							0	0.0	
NNW	16.6	5.5					4	22.1	1.8
CALM							0	0.0	
COL. TOTALS	49.7	38.6	5.5	5.5			18		2.9

200 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	.4
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	.9
SSE	8.3						1	8.3	.5
S	8.3						1	8.3	2.1
SSW	8.3						1	8.3	.4
SW							0	0.0	
WSW	8.3						1	8.3	.7
W							0	0.0	
WNW	8.3						1	8.3	2.0
NW	25.0						3	25.0	1.3
NNW	8.3	8.3					2	16.6	3.0
CALM							0	0.0	
COL. TOTALS	91.4	8.3					12		1.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						2	11.1	1.1
E	5.5						1	5.5	.1
ESE	11.1	5.5					3	16.6	3.2
SE	5.5	11.1					3	16.6	3.4
SSE	16.6						3	16.6	1.7
S							0	0.0	
SSW	5.5						1	5.5	.3
SW							0	0.0	
WSW							0	0.0	
W	5.5		5.5				2	11.0	4.2
WNW			5.5				1	5.5	8.2
NW	11.1						2	11.1	1.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	71.9	16.6	11.0				18		2.6

300 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.6
NNE	16.6						2	16.6	.1
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	.7
SSE	8.3						1	8.3	1.6
S	8.3						1	8.3	1.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	25.0						3	25.0	1.3
NW		8.3					1	8.3	5.3
NNW	16.6						2	16.6	1.9
CALM							0	0.0	
COL. TOTALS	91.4	8.3					12		1.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	5.5						1	5.5	1.7
ENE							0	0.0	
E	5.5						1	5.5	.9
ESE	5.5						1	5.5	2.7
SE	33.3	11.1					8	44.4	2.1
SSE							0	0.0	
S			5.5				1	5.5	7.5
SSW		5.5					1	5.5	3.6
SW							0	0.0	
WSW							0	0.0	
W		5.5	5.5				2	11.0	6.7
WNW							0	0.0	
NW	5.5	5.5					2	11.0	3.2
NNW	5.5						1	5.5	1.3
CALM							0	0.0	
COL. TOTALS	60.6	27.6	11.0				18		3.0

500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.2
NNE	16.6						2	16.6	.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		8.3					1	8.3	4.1
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	16.6	16.6					4	33.2	2.7
W							0	0.0	
WNW							0	0.0	
NW		8.3		8.3			2	16.6	7.8
NNW	8.3	8.3					2	16.6	2.2
CALM							0	0.0	
COL. TOTALS	41.5	49.8		8.3			12		3.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

750 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	5.5						1	5.5	.7
NE							0	0.0	
ENE							0	0.0	
E	5.5						1	5.5	1.0
ESE			5.5				1	5.5	7.6
SE	5.5				5.5		2	11.0	10.0
SSE			5.5				1	5.5	8.3
S	5.5	11.1	5.5				4	22.1	4.0
SSW							0	0.0	
SW		5.5					1	5.5	5.4
WSW	5.5	5.5					2	11.0	2.0
W	5.5	5.5	5.5				3	16.5	4.5
WNW		5.5					1	5.5	4.2
NW		5.5					1	5.5	5.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.0	38.6	22.0		5.5		18		4.8

750-METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	.6
ESE							0	0.0	
SE							0	0.0	
SSE	8.3	8.3					2	16.6	3.7
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	.9
WSW							0	0.0	
W		16.6	8.3				3	24.9	5.4
WNW		8.3	8.3				2	16.6	7.4
NW							0	0.0	
NNW	8.3	8.3	8.3				3	24.9	4.5
CALM							0	0.0	
COL. TOTALS	33.2	41.5	24.9				12		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		5.5					1	5.5	4.8
SE		5.5					1	5.5	5.8
SSE			5.5				1	5.5	9.8
S		5.5					1	5.5	4.6
SSW							0	0.0	
SW		5.5					1	5.5	4.9
WSW		5.5	5.5				2	11.0	6.4
W		16.6		5.5			4	22.1	6.3
WNW	5.5	16.6	5.5				5	27.6	4.4
NW		5.5	5.5				2	11.0	5.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	5.5	66.2	22.0	5.5			18		5.6

1000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	1.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	2.9
WSW				8.3			1	8.3	11.3
W	8.3		8.3	8.3	8.3		4	33.2	10.9
WNW		16.6	8.3				3	24.9	5.2
NW		8.3	8.3				2	16.6	6.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	24.9	24.9	16.6	8.3		12		7.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		12.5					2	12.5	3.8
S							0	0.0	
SSW							0	0.0	
SW				6.2			1	6.2	15.6
WSW	6.2			6.2			2	12.4	6.6
W			6.2	18.7			4	24.9	9.8
WNW		6.2	18.7		6.2		5	31.1	9.6
NW			6.2				1	6.2	6.8
NNW			6.2				1	6.2	6.9
CALM							0	0.0	
COL. TOTALS	6.2	18.7	37.3	31.1	6.2		16		8.6

1500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				9.0			1	9.0	11.4
WSW		9.0					1	9.0	5.3
W			18.1	27.2	9.0		6	54.3	11.5
WNW		9.0		9.0			2	18.0	8.8
NW			9.0				1	9.0	8.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		18.0	27.1	45.2	9.0		11		10.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	6.6						1	6.6	2.6
WSW	6.6				6.6		2	13.2	9.2
W					13.3	6.6	3	19.9	21.8
WNW		6.6	6.6	6.6			3	19.8	7.4
NW		6.6	20.0	6.6			5	33.2	9.2
NNW			6.6				1	6.6	7.4
CALM							0	0.0	
COL. TOTALS	13.2	13.2	33.2	13.2	19.9	6.6	15		10.8

2000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	1.3
S							0	0.0	
SSW							0	0.0	
SW	9.0						1	9.0	2.1
WSW				9.0	9.0		2	18.0	13.2
W				9.0		9.0	2	18.0	24.1
WNW			18.1				2	18.1	7.9
NW				9.0			1	9.0	14.7
NNW		9.0	9.0				2	18.0	7.4
CALM							0	0.0	
COL. TOTALS	18.0	9.0	27.1	27.0	9.0	9.0	11		11.2

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MONTH OF OCTOBER 1978 MORNING

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (METERS) 001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	1.7			7.0	12.2	1.7	1.7	10.5				34.8
101-250	10.5		3.5	3.5	7.0	5.2	3.5	7.0				40.2
251-500	10.5		1.7	5.2	1.7	1.7	1.7					22.5
501-750	1.7											1.7
TOTAL	24.4		5.2	15.7	20.9	8.6	6.9	17.5				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				57

INVERSION TYPE	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
1			3.5	7.0	8.7	5.2	5.2	10.5				40.1
2	10.5		1.7	5.2	10.5	3.5	1.7	5.2				38.3
3	8.7			3.5	1.7			1.7				15.6
4	5.2											5.2
5												

MONTH OF OCTOBER 1978 AFTERNOON

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (METERS) 001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				8.0	12.0	12.0	8.0	16.0				56.0
101-250			4.0	8.0	12.0			8.0				32.0
251-500												
501-750												
TOTAL			4.0	16.0	24.0	12.0	8.0	24.0				
NO INVERSION												12.0
								TOTAL NO. OF OCCURENCES				22

INVERSION TYPE	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
1			4.5		9.0	13.6		18.1				45.2
2				9.0	18.1		4.5	4.5				36.1
3				4.5				4.5				9.0
4				4.5								4.5
5							4.5					4.5

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR OCTOBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	7	0
101- 250	6	0
251- 500	0	2
501- 750	0	3
751-1000	0	1
1001-1500	0	2
>1500	1	4
TOTAL	14	12
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	1.8	3.7
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.00	-01.07

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	12.5						2	12.5	.4
NE		6.2					1	6.2	4.5
ENE	6.2						1	6.2	.5
E	12.5						2	12.5	2.0
ESE	12.5						2	12.5	.9
SE							0	0.0	
SSE	6.2						1	6.2	.5
S	6.2						1	6.2	.5
SSW							0	0.0	
SW	6.2						1	6.2	.5
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	6.2						1	6.2	.9
CALM							4	25.0	
COL. TOTALS	68.5	6.2					16		.8

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3						1	8.3	1.8
ENE							0	0.0	
E	16.6						2	16.6	1.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	.4
WSW	16.6						2	16.6	.9
W	16.6						2	16.6	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							4	33.0	
COL. TOTALS	66.4						12		.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	6.2						1	6.2	.9
ENE							0	0.0	
E	6.2						1	6.2	.4
ESE	18.7			6.2			4	24.9	4.1
SE	25.0						4	25.0	1.4
SSE	6.2		6.2				2	12.4	3.7
S							0	0.0	
SSW	12.5						2	12.5	1.0
SW							0	0.0	
WSW	6.2						1	6.2	1.0
W							0	0.0	
WNW	6.2						1	6.2	2.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	87.2		6.2	6.2			16		2.2

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						2	16.6	1.6
NNE	8.3						1	8.3	2.0
NE							0	0.0	
ENE							0	0.0	
E	16.6						2	16.6	.4
ESE		8.3					1	8.3	5.4
SE		8.3					1	8.3	3.7
SSE							0	0.0	
S	8.3						1	8.3	1.3
SSW							0	0.0	
SW	8.3						1	8.3	.6
WSW	8.3						1	8.3	1.3
W							0	0.0	
WNW	8.3						1	8.3	.3
NW	8.3						1	8.3	1.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	83.0	16.6					12		1.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	6.2						1	6.2	1.3
ESE	12.5	6.2		6.2			4	24.9	4.4
SE	6.2						1	6.2	1.8
SSE	25.0						4	25.0	1.2
S	12.5		6.2				3	18.7	3.4
SSW							0	0.0	
SW		6.2					1	6.2	3.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	6.2	6.2					2	12.4	3.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	68.6	18.6	6.2	6.2			16		2.9

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	2.4
NE	8.3						1	8.3	1.2
ENE							0	0.0	
E	8.3						1	8.3	.5
ESE	8.3		8.3				2	16.6	4.9
SE	8.3						1	8.3	1.6
SSE	16.6						2	16.6	1.4
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	1.8
WNW	8.3						1	8.3	.9
NW	8.3						1	8.3	1.8
NNW	8.3						1	8.3	1.6
CALM							0	0.0	
COL. TOTALS	91.3		8.3				12		2.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	12.5	6.2					3	18.7	1.8
ESE	6.2			6.2			2	12.4	6.1
SE	12.5						2	12.5	1.7
SSE							0	0.0	
S		6.2					1	6.2	3.1
SSW	12.5		6.2				3	18.7	2.6
SW	6.2		6.2				2	12.4	4.6
WSW							0	0.0	
W	6.2						1	6.2	.6
WNW							0	0.0	
NW	6.2						1	6.2	2.7
NNW		6.2					1	6.2	3.5
CALM							0	0.0	
COL. TOTALS	62.3	18.6	12.4	6.2			16		3.0

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	16.6						2	16.6	2.2
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	1.5
E	8.3						1	8.3	.7
ESE		16.6					2	16.6	4.2
SE							0	0.0	
SSE	8.3						1	8.3	2.1
S							0	0.0	
SSW	8.3						1	8.3	.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	1.7
NNW	8.3	8.3	8.3				3	24.9	3.8
CALM							0	0.0	
COL. TOTALS	66.4	24.9	8.3				12		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						RCW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	6.6						1	6.6	2.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	20.0			6.6			4	26.6	4.1
SSE		6.6					1	6.6	3.7
S			6.6				1	6.6	6.9
SSW							0	0.0	
SW	20.0		6.6				4	26.6	3.0
WSW	6.6						1	6.6	1.6
W	6.6						1	6.6	.7
WNW							0	0.0	
NW		6.6					1	6.6	5.8
NNW	6.6						1	6.6	1.6
CALM							0	0.0	
COL. TOTALS	66.4	13.2	13.2	6.6			15		3.4

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						RCW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		8.3					1	8.3	5.9
ESE			8.3				1	8.3	6.5
SE	8.3						1	8.3	.8
SSE	8.3						1	8.3	2.1
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	1.8
WSW	8.3						1	8.3	1.6
W							0	0.0	
WNW	8.3						1	8.3	.9
NW		16.6	8.3				3	24.9	5.3
NNW	8.3						1	8.3	1.9
CALM							0	0.0	
COL. TOTALS	58.1	24.9	16.6				12		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						RCW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		7.1					1	7.1	5.0
SSE			14.2				2	14.2	6.8
S	7.1	7.1					2	14.2	3.4
SSW							0	0.0	
SW				7.1			1	7.1	11.0
WSW							0	0.0	
W	7.1	7.1	7.1				3	21.3	5.2
WNW	21.4		7.1				4	28.5	3.4
NW							0	0.0	
NNW				7.1			1	7.1	11.7
CALM							0	0.0	
COL. TOTALS	35.6	21.3	28.4	14.2			14		5.8

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********** WIND SPEEDS METERS/SECOND **********						RCW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.6
NNE							0	0.0	
NE	8.3						1	8.3	1.5
ENE							0	0.0	
E	8.3		8.3				2	16.6	4.6
ESE		8.3	8.3				2	16.6	5.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		8.3					1	8.3	3.2
WNW		16.6	16.6				4	33.2	6.1
NW		8.3					1	8.3	3.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	41.5	33.2				12		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			7.6				1	7.6	7.5
ESE							0	0.0	
SE	7.6						1	7.6	2.9
SSE							0	0.0	
S	7.6						1	7.6	2.6
SSW							0	0.0	
SW					7.6		1	7.6	16.5
WSW	7.6	7.6	15.3				4	30.5	6.2
W		7.6		23.0			4	30.6	9.0
WNW							0	0.0	
NW							0	0.0	
NNW	7.6						1	7.6	2.7
CALM							0	0.0	
COL. TOTALS	30.4	15.2	22.9	23.0	7.6		13		7.1

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	1.2
NE							0	0.0	
ENE							0	0.0	
E			9.0				1	9.0	8.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			9.0				1	9.0	7.4
SSW							0	0.0	
SW							0	0.0	
WSW			36.3				4	36.3	7.4
W			9.0				1	9.0	7.5
WNW			18.1	9.0			3	27.1	9.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0		81.4	9.0			11		7.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		8.3					1	8.3	5.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		8.3					1	8.3	4.5
WSW			8.3	16.6			3	24.9	11.1
W			16.6	16.6	16.6		6	49.8	12.9
WNW							0	0.0	
NW	8.3						1	8.3	1.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	16.6	24.9	33.2	16.6		12		10.2

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	2.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		11.1					1	11.1	5.7
SSW							0	0.0	
SW							0	0.0	
WSW				11.1			1	11.1	10.0
W			22.2	33.3			5	55.5	11.5
WNW							0	0.0	
NW				11.1			1	11.1	10.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	22.2	55.5			9		9.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				11.1			1	11.1	13.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			11.1				1	11.1	8.4
WSW					11.1		1	11.1	16.4
W				22.2	11.1		3	33.3	15.4
WNW					22.2		2	22.2	20.4
NW							0	0.0	
NNW	11.1						1	11.1	1.6
CALM							0	0.0	
COL. TOTALS	11.1		11.1	33.3	44.4		9		14.0

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				14.2			1	14.2	12.9
SW							0	0.0	
WSW		14.2					1	14.2	4.7
W				14.2	14.2		2	28.4	15.5
WNW					14.2		1	14.2	20.0
NW	14.2			14.2			2	28.4	8.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	14.2		42.6	28.4		7		12.2

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MONTH OF NOVEMBER 1978 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	2.0		2.0	6.0	4.0	6.0	6.0	6.0				32.0
101-250	10.0	2.0	4.0	6.0	4.0	8.0	4.0	6.0				44.0
251-500	2.0		0.0	2.0	2.0		2.0	2.0				16.0
501-750	2.0			2.0	2.0							6.0
TOTAL	16.0	2.0	12.0	16.0	12.0	14.0	12.0	14.0				
NO INVERSION												2.0
								TOTAL NO. OF OCCURENCES				49
INVERSION TYPE												
1		2.0		4.0	4.0	4.0	6.1	6.1				26.2
2	2.0		10.2	10.2	6.1	6.1	6.1	4.0				44.7
3	10.2		2.0	2.0	2.0	2.0		4.0				22.2
4	4.0					2.0						6.0
5												

MONTH OF NOVEMBER 1978 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100				11.5	11.5	3.8	3.8	3.8				34.4
101-250			15.3	7.6		3.8	7.6	11.5				45.8
251-500				3.8	3.8	3.8	3.8					15.2
501-750												
TOTAL			15.3	22.9	15.3	11.4	15.2	15.3				
NO INVERSION												3.0
								TOTAL NO. OF OCCURENCES				25
INVERSION TYPE												
1			8.0	4.0	4.0	4.0	12.0	12.0				44.0
2			4.0	20.0	8.0	4.0	4.0	4.0				44.0
3			4.0		4.0							8.0
4						4.0						4.0
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR NOVEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	6	0
101- 250	2	3
251- 500	6	5
501- 750	0	1
751-1000	0	2
1001-1500	1	0
>1500	0	0
TOTAL	15	11
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.0	1.9
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.80	-00.91

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	.9
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	10.0						1	10.0	2.2
SW							0	0.0	
WSW							0	0.0	
W	20.0						2	20.0	1.3
WNW	10.0						1	10.0	.4
NW	20.0						2	20.0	1.3
NNW							0	0.0	
CALM							3	30.0	
COL. TOTALS	70.0						10		.8

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	20.0	20.0					4	40.0	3.1
WNW	20.0						2	20.0	1.5
NW	10.0						1	10.0	1.3
NNW	10.0						1	10.0	1.8
CALM							2	20.0	
COL. TOTALS	60.0	20.0					10		1.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0	10.0					2	20.0	2.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0						1	10.0	1.6
SE	10.0						1	10.0	2.4
SSE	10.0		10.0				2	20.0	4.1
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0						1	10.0	1.7
WNW	20.0						2	20.0	2.7
NW			10.0				1	10.0	6.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	70.0	10.0	20.0				10		3.0

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	10.0						1	10.0	.4
E	10.0						1	10.0	1.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	10.0						1	10.0	1.9
W			10.0				1	10.0	6.3
WNW							0	0.0	
NW	10.0	10.0	10.0				3	30.0	4.2
NNW	20.0		10.0				3	30.0	2.4
CALM							0	0.0	
COL. TOTALS	60.0	10.0	30.0				10		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0		10.0				2	20.0	3.6
ESE							0	0.0	
SE		10.0					1	10.0	4.2
SSE							0	0.0	
S				10.0			1	10.0	10.6
SSW							0	0.0	
SW							0	0.0	
WSW	10.0						1	10.0	.8
W	20.0						2	20.0	1.3
WNW			10.0				1	10.0	1.0
NW	10.0						1	10.0	2.1
NNW		10.0					1	10.0	5.5
CALM							0	0.0	
COL. TOTALS	50.0	20.0	20.0	10.0			10		4.0

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	30.0						3	30.0	.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	10.0						1	10.0	.8
WSW		10.0					1	10.0	4.0
W			10.0				1	10.0	7.5
WNW							0	0.0	
NW	10.0					10.0	2	20.0	15.1
NNW	10.0		10.0				2	20.0	4.4
CALM							0	0.0	
COL. TOTALS	60.0	10.0	20.0			10.0	10		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	20.0		10.0				3	30.0	4.3
ESE							0	0.0	
SE		10.0					1	10.0	5.6
SSE	10.0						1	10.0	1.4
S				10.0			1	10.0	13.6
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			20.0				2	20.0	7.6
NW							0	0.0	
NNW	10.0		10.0				2	20.0	3.6
CALM							0	0.0	
COL. TOTALS	40.0	10.0	40.0	10.0			10		5.5

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0	10.0					2	20.0	2.6
SE							0	0.0	
SSE		10.0					1	10.0	3.8
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			10.0				1	10.0	8.0
W				10.0			1	10.0	11.7
WNW	10.0						1	10.0	1.7
NW		20.0				10.0	3	30.0	15.6
NNW		10.0					1	10.0	4.7
CALM							0	0.0	
COL. TOTALS	20.0	50.0	10.0	10.0		10.0	10		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	2.5
NE							0	0.0	
ENE		11.1					1	11.1	3.3
E							0	0.0	
ESE				11.1			1	11.1	13.2
SE		11.1					1	11.1	4.8
SSE	11.1						1	11.1	2.0
S	11.1						1	11.1	1.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			22.2				2	22.2	7.1
NW		11.1					1	11.1	4.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	22.2	11.1			9		5.1

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		10.0					1	10.0	4.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		10.0					1	10.0	3.6
SE			10.0				1	10.0	6.4
SSE							0	0.0	
S	10.0	10.0					2	20.0	5.6
SSW							0	0.0	
SW							0	0.0	
WSW				10.0			1	10.0	12.0
W		10.0					1	10.0	3.5
WNW							0	0.0	
NW			20.0				2	20.0	7.9
NNW		10.0					1	10.0	5.9
CALM							0	0.0	
COL. TOTALS	10.0	50.0	30.0	10.0			10		5.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	12.5						1	12.5	2.7
E							0	0.0	
ESE				12.5			1	12.5	11.7
SE			12.5				1	12.5	6.0
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		12.5					1	12.5	5.4
WSW		12.5					1	12.5	3.3
W	12.5		12.5				2	25.0	4.5
WNW			12.5				1	12.5	5.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	25.0	37.5	12.5			8		5.9

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		20.0	10.0				3	30.0	5.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				30.0			3	30.0	12.1
WNW			10.0	20.0			3	30.0	11.4
NW							0	0.0	
NNW	10.0						1	10.0	1.1
CALM							0	0.0	
COL. TOTALS	10.0	20.0	20.0	50.0			10		8.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		12.5					1	12.5	4.0
ESE				12.5			1	12.5	11.7
SE							0	0.0	
SSE			12.5				1	12.5	8.2
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		12.5	12.5				2	25.0	6.0
W				25.0			2	25.0	14.4
WNW				12.5			1	12.5	11.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	25.0	50.0			8		9.5

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		25.0					2	25.0	4.1
SSE							0	0.0	
S			12.5				1	12.5	7.9
SSW							0	0.0	
SW							0	0.0	
WSW			12.5				1	12.5	5.5
W			12.5	12.5			2	25.0	11.7
WNW					12.5		1	12.5	20.9
NW				12.5			1	12.5	11.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		25.0	37.5	25.0	12.5		8		10.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				16.6		16.6	2	33.2	20.8
W				33.3	16.6		3	49.9	15.1
WNW				16.6			1	16.6	15.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				66.5	16.6	16.6	6		17.0

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	20.0						1	20.0	2.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				20.0			1	20.0	13.9
WSW							0	0.0	
W			20.0	20.0			2	40.0	10.8
WNW			20.0				1	20.0	6.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		40.0	40.0			5		8.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			50.0				1	50.0	9.4
W							0	0.0	
WNW				50.0			1	50.0	13.1
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			50.0	50.0			2		11.2

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				33.3			1	33.3	12.7
W							0	0.0	
WNW				33.3			1	33.3	15.9
NW			33.3				1	33.3	7.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	66.6			3		12.1

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MONTH OF DECEMBER 1978 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	4.3			8.6	4.3		4.3	8.6				30.1
101-250	13.0	4.3	4.3	8.6	13.0		4.3	4.3				51.8
251-500	4.3			8.6		4.3						17.2
501-750												
TOTAL	21.6	4.3	4.3	25.8	17.3	4.3	8.6	12.9				
NO INVERSION												0.0
											TOTAL NO. OF OCCURENCES	23
INVERSION TYPE												
1	4.3			4.3	8.6		4.3	13.0				34.5
2	8.6		4.3	4.3	8.6							25.8
3	4.3	4.3		17.3		4.3	4.3					34.5
4	4.3											4.3
5												

MONTH OF DECEMBER 1978 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	4.0		8.0		16.0	4.0	16.0		4.0			52.0
101-250		4.0	8.0	4.0	8.0		4.0	4.0				32.0
251-500			8.0			4.0						12.0
501-750												
TOTAL	4.0	4.0	24.0	4.0	24.0	8.0	20.0	4.0	4.0			
NO INVERSION												4.0
											TOTAL NO. OF OCCURENCES	24
INVERSION TYPE												
1			8.3		16.6		12.5		4.1			41.5
2	4.1		4.1	4.1	4.1		4.1	4.1				24.6
3		4.1	12.5		4.1	8.3	4.1					33.1
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR DECEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	1	0
101- 250	2	3
251- 500	5	2
501- 750	0	0
751-1000	0	1
1001-1500	0	0
>1500	0	0
TOTAL	8	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.1	3.1
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.84	-01.05

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		8.3					1	8.3	5.6
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	8.3						1	8.3	2.4
NW							0	0.0	
NNW	8.3						1	8.3	.4
CALM							8	66.0	
COL. TOTALS	24.9	8.3					12		.7

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	18.1						2	18.1	1.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							8	72.0	
COL. TOTALS	27.1						11		.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	25.0		8.3				4	33.3	2.8
SE	41.6	8.3					6	49.9	2.1
SSE							0	0.0	
S	8.3						1	8.3	1.7
SSW							0	0.0	
SW							0	0.0	
WSW	8.3						1	8.3	.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	83.2	8.3	8.3				12		2.2

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.6
ENE	18.1						2	18.1	.6
E	18.1						2	18.1	1.2
ESE	9.0						1	9.0	1.2
SE	18.1						2	18.1	2.2
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	.5
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	9.0						1	9.0	.4
NNW	9.0						1	9.0	1.5
CALM							0	0.0	
COL. TOTALS	99.3						11		1.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	1.9
ESE	25.0	8.3					4	33.3	3.1
SE	8.3	25.0					4	33.3	3.4
SSE							0	0.0	
S	8.3						1	8.3	1.4
SSW	16.6						2	16.6	.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.5	33.3					12		2.5

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.0
NNE	9.0						1	9.0	.8
NE	9.0						1	9.0	.8
ENE	9.0						1	9.0	.7
E							0	0.0	
ESE	9.0						1	9.0	2.1
SE	9.0						1	9.0	2.5
SSE	9.0						1	9.0	1.9
S	9.0						1	9.0	2.3
SSW							0	0.0	
SW							0	0.0	
WSW	9.0						1	9.0	.7
W							0	0.0	
WNW							0	0.0	
NW	9.0						1	9.0	1.3
NNW	9.0						1	9.0	2.2
CALM							0	0.0	
COL. TOTALS	99.0						11		1.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	.7
ESE	25.0	8.3					4	33.3	1.9
SE	16.6	16.6					4	33.2	2.8
SSE	16.6						2	16.6	2.4
S							0	0.0	
SSW	8.3						1	8.3	2.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	74.8	24.9					12		2.2

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.9
NNE							0	0.0	
NE	9.0						1	9.0	.8
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	1.6
SE	9.0						1	9.0	1.6
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	1.0
SW	9.0						1	9.0	.4
WSW							0	0.0	
W	9.0						1	9.0	2.0
WNW	9.0						1	9.0	.2
NW	18.1						2	18.1	1.3
NNW	9.0						1	9.0	1.7
CALM							0	0.0	
COL. TOTALS	90.1	9.0					11		1.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	16.6						2	16.6	2.0
NE	8.3						1	8.3	.3
ENE							0	0.0	
E	8.3						1	8.3	1.6
ESE	8.3						1	8.3	2.6
SE	8.3		8.3				2	16.6	5.3
SSE	16.6						2	16.6	.8
S	16.6	8.3					3	24.9	1.9
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	83.0	8.3	8.3				12		2.2

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	2.5
E							0	0.0	
ESE		9.0					1	9.0	4.3
SE	27.2						3	27.2	1.5
SSE							0	0.0	
S	9.0						1	9.0	1.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	9.0	18.1					3	27.1	3.5
NNW	9.0	9.0					2	18.0	3.3
CALM							0	0.0	
COL. TOTALS	63.2	36.1					11		2.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			10.0				1	10.0	6.7
SE	10.0	10.0					2	20.0	3.4
SSE		20.0					2	20.0	4.7
S		20.0					2	20.0	3.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0						1	10.0	1.6
WNW	10.0						1	10.0	1.7
NW	10.0						1	10.0	2.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	50.0	10.0				10		3.5

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		9.0					1	9.0	3.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.1
ESE	18.1		9.0				3	27.1	4.2
SE							0	0.0	
SSE	9.0	9.0					2	18.0	3.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			9.0				1	9.0	6.4
W			9.0				1	9.0	7.0
WNW		9.0					1	9.0	5.3
NW			9.0				1	9.0	6.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.1	36.0	36.0				11		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		12.5					1	12.5	4.2
SE	12.5	12.5					2	25.0	2.5
SSE			25.0				2	25.0	8.4
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	12.5	12.5					2	25.0	3.4
NW							0	0.0	
NNW	12.5						1	12.5	2.2
CALM							0	0.0	
COL. TOTALS	37.5	37.5	25.0				8		4.4

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	9.0			9.0			2	18.0	5.6
SE		9.0					1	9.0	3.6
SSE	9.0	9.0					2	18.0	2.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		9.0	9.0				2	18.0	6.2
W				9.0			1	9.0	10.4
WNW	9.0	9.0	9.0				3	27.0	4.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	36.0	18.0	18.0			11		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		20.0	20.0				2	40.0	5.7
WNW		20.0					1	20.0	3.7
NW	20.0	20.0					2	40.0	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	60.0	20.0				5		4.3

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		11.1					1	11.1	3.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			11.1				1	11.1	7.6
W	11.1	11.1	22.2				4	44.4	5.8
WNW			11.1	11.1			2	22.2	8.1
NW							0	0.0	
NNW		11.1					1	11.1	5.3
CALM							0	0.0	
COL. TOTALS	11.1	33.3	44.4	11.1			9		6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			100.0				1	100.0	7.5
CALM							0	0.0	
COL. TOTALS			100.0				1		7.5

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	20.0						1	20.0	2.7
E		20.0					1	20.0	3.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		20.0					1	20.0	4.9
WNW				20.0			1	20.0	15.4
NW							0	0.0	
NNW			20.0				1	20.0	8.0
CALM							0	0.0	
COL. TOTALS	20.0	40.0	20.0	20.0			5		6.9

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MONTH OF JANUARY 1979 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	2.0		2.0	2.0		6.2	8.3	10.4				30.9
101-250	2.0	6.2	4.1	8.3	8.3	2.0	12.5	4.1				47.5
251-500		2.0		2.0	2.0	2.0	6.2					14.2
501-750			6.2									6.2
TOTAL	4.0	8.2	12.3	12.3	10.3	10.2	27.0	14.5				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				48
INVERSION TYPE												
1		2.0		4.1		6.2	8.3	10.4				31.0
2		4.1	10.4	2.0	4.1		12.5	2.0				35.1
3		2.0	2.0	6.2	6.2	2.0	6.2					24.6
4	4.1					2.0		2.0				8.1
5												

MONTH OF JANUARY 1979 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100			5.7	5.7	5.7	2.8	2.8	11.4				34.1
101-250		2.8	8.5	17.1	8.5	2.8	2.8	11.4				53.9
251-500		2.8	2.8					2.8				8.4
501-750				2.8								2.8
TOTAL		5.6	17.0	25.6	14.2	5.6	5.6	25.6				
NO INVERSION												0.0
								TOTAL NO. OF OCCURENCES				35
INVERSION TYPE												
1		2.8	8.5	8.5	8.5	2.8	2.8	11.4				45.3
2		2.8	5.7	8.5	2.8	2.8		8.5				31.1
3			2.8	8.5	2.8		2.8	5.7				22.6
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JANUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	2	2
251- 500	6	4
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	10	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	1.7	1.3
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.29	-01.05

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE							0	0.0	
NE		11.1					1	11.1	3.4
ENE	22.2						2	22.2	2.3
E				11.1			1	11.1	10.0
ESE							0	0.0	
SE		11.1					1	11.1	5.6
SSE	11.1						1	11.1	1.3
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	.4
W							0	0.0	
WNW	11.1						1	11.1	.4
NW							0	0.0	
NNW							0	0.0	
CALM							1	11.0	
COL. TOTALS	55.5	22.2		11.1			9		2.8

SURFACE WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAG SPEED
N	10.0						1	10.0	.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	30.0						3	30.0	.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	20.0						2	20.0	1.3
WNW	10.0						1	10.0	.5
NW	10.0	10.0					2	20.0	3.3
NNW							0	0.0	
CALM							1	10.0	
COL. TOTALS	80.0	10.0					10		1.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	1.1
ENE							0	0.0	
E							0	0.0	
ESE	11.1						1	11.1	1.7
SE		11.1	11.1				2	22.2	6.2
SSE		22.2					2	22.2	5.1
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	11.1						1	11.1	2.5
NW							0	0.0	
NNW	22.2						2	22.2	1.2
CALM							0	0.0	
COL. TOTALS	55.5	33.3	11.1				9		3.3

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	20.0						2	20.0	1.9
SE							0	0.0	
SSE	20.0						2	20.0	1.7
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	10.0						1	10.0	2.6
NNW	30.0		20.0				5	50.0	3.7
CALM							0	0.0	
COL. TOTALS	30.0		20.0				10		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	3.1
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1		11.1				2	22.2	5.5
SE		11.1					1	11.1	3.9
SSE		11.1					1	11.1	3.3
S			11.1				1	11.1	7.5
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	1.9
W							0	0.0	
WNW	11.1						1	11.1	2.4
NW							0	0.0	
NNW	11.1						1	11.1	2.5
CALM							0	0.0	
COL. TOTALS	44.4	33.3	22.2				9		4.0

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	2.5
ESE							0	0.0	
SE	10.0						1	10.0	.7
SSE	10.0						1	10.0	2.3
S	20.0	10.0					3	30.0	1.6
SSW							0	0.0	
SW							0	0.0	
WSW	10.0						1	10.0	1.7
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			20.0				2	20.0	7.3
CALM							0	0.0	
COL. TOTALS	70.0	10.0	20.0				10		2.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				11.1			1	11.1	11.7
SE		11.1					1	11.1	3.0
SSE		11.1					1	11.1	4.1
S		11.1		11.1			2	22.2	8.4
SSW							0	0.0	
SW							0	0.0	
WSW		11.1					1	11.1	4.1
W							0	0.0	
WNW	11.1						1	11.1	2.7
NW	11.1						1	11.1	1.3
NNW		11.1					1	11.1	4.5
CALM							0	0.0	
COL. TOTALS	22.2	55.5		22.2			9		5.3

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	10.0						1	10.0	2.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	20.0	10.0					3	30.0	2.5
SSE	10.0						1	10.0	.9
S		10.0					1	10.0	3.9
SSW	10.0						1	10.0	2.9
SW							0	0.0	
WSW							0	0.0	
W	10.0						1	10.0	1.4
WNW							0	0.0	
NW							0	0.0	
NNW		10.0	10.0				2	20.0	6.0
CALM							0	0.0	
COL. TOTALS	60.0	30.0	10.0				10		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				11.1			1	11.1	11.4
SE	22.2		11.1				3	33.3	3.5
SSE							0	0.0	
S					11.1		1	11.1	18.0
SSW							0	0.0	
SW							0	0.0	
WSW		11.1					1	11.1	4.0
W		11.1					1	11.1	4.9
WNW							0	0.0	
NW		11.1					1	11.1	4.9
NNW	11.1						1	11.1	1.5
CALM							0	0.0	
COL. TOTALS	33.3	33.3	11.1	11.1	11.1		9		6.1

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			10.0				1	10.0	8.8
SE	10.0	10.0					2	20.0	3.2
SSE							0	0.0	
S			10.0				1	10.0	7.7
SSW							0	0.0	
SW							0	0.0	
WSW	10.0						1	10.0	2.9
W		10.0					1	10.0	3.7
WNW							0	0.0	
NW		10.0	10.0				2	20.0	5.5
NNW		10.0					1	10.0	5.2
CALM							0	0.0	
COL. TOTALS	30.0	40.0	30.0				10		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		11.1	11.1	11.1			3	33.3	8.2
SSE							0	0.0	
S				11.1			1	11.1	10.2
SSW							0	0.0	
SW							0	0.0	
WSW		22.2	11.1				3	33.3	5.3
W				11.1			1	11.1	11.6
WNW							0	0.0	
NW		11.1					1	11.1	5.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		44.4	22.2	33.3			9		7.5

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		10.0					1	10.0	3.2
SSE			10.0				1	10.0	7.7
S							0	0.0	
SSW							0	0.0	
SW				10.0			1	10.0	10.1
WSW	10.0			10.0			2	20.0	5.7
W			10.0				1	10.0	6.3
WNW	10.0		10.0				2	20.0	4.3
NW		10.0	10.0				2	20.0	6.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	40.0	20.0			10		6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				14.2			1	14.2	10.1
SSW				14.2			1	14.2	10.0
SW							0	0.0	
WSW		28.5					2	28.5	4.6
W			14.2	14.2			2	28.4	9.6
WNW							0	0.0	
NW			14.2				1	14.2	7.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		28.5	28.4	42.6			7		7.9

1000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE					10.0		1	10.0	17.0
S							0	0.0	
SSW							0	0.0	
SW			10.0				1	10.0	7.3
WSW	10.0	20.0	10.0	10.0			5	50.0	6.0
W			10.0	10.0			2	20.0	8.7
WNW			10.0				1	10.0	6.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	20.0	40.0	20.0	10.0		10		7.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			16.6				1	16.6	9.3
SW							0	0.0	
WSW				16.6			1	16.6	10.8
W			33.3		16.6		3	49.9	11.7
WNW				16.6			1	16.6	12.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			49.9	33.2	16.6		6		11.2

1500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			14.2				1	14.2	7.7
SW				28.5			2	28.5	11.0
WSW							0	0.0	
W			14.2	14.2			2	28.4	11.1
WNW			14.2	14.2			2	28.4	10.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			42.6	56.9			7		10.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE					25.0		1	25.0	24.8
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			25.0				1	25.0	9.2
SW							0	0.0	
WSW							0	0.0	
W				25.0			1	25.0	12.0
WNW							0	0.0	
NW				25.0			1	25.0	11.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			25.0	50.0	25.0		4		14.3

2000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAG SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			25.0	50.0			3	75.0	11.7
WSW							0	0.0	
W							0	0.0	
WNW			25.0				1	25.0	8.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			50.0	50.0			4		10.9

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MONTH OF FEBRUARY 1979 MORNING

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100	13.6		4.5	13.6	4.5	4.5		4.5				45.2
101-250		4.5	9.0	9.0	9.0	4.5		4.5				40.5
251-500	4.5					4.5						9.0
501-750												
TOTAL	18.1	4.5	13.5	22.6	13.5	13.5		9.0				
NO INVERSION												4.0
								TOTAL NO. OF OCCURENCES				21

INVERSION TYPE												
1			9.5	14.2		4.7						28.4
2	9.5	4.7			9.5	4.7						28.4
3	9.5		4.7	4.7	4.7	4.7		9.5				37.8
4				4.7								4.7
5												

MONTH OF FEBRUARY 1979 AFTERNOON

THICKNESS (METERS)	INVERSION BASE HEIGHT (METERS) SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
001-100		10.0	10.0	20.0		5.0						45.0
101-250	5.0	5.0	10.0	10.0	5.0	10.0		5.0				50.0
251-500												
501-750												
TOTAL	5.0	15.0	20.0	30.0	5.0	15.0		5.0				
NO INVERSION												5.0
								TOTAL NO. OF OCCURENCES				19

INVERSION TYPE												
1				10.5		5.2						15.7
2		10.5	15.7	21.0	5.2	5.2						57.6
3	5.2	5.2	5.2			5.2		5.2				26.0
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR FEBRUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	3	3
251- 500	3	4
501- 750	2	1
751-1000	0	1
1001-1500	1	0
>1500	0	0
TOTAL	9	9
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	4.4	2.8
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-01.15	-01.66

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			10.0				1	10.0	6.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	40.0						4	40.0	1.2
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							4	40.0	
COL. TOTALS	50.0		10.0				10		1.2

SURFACE WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.1
ESE							0	0.0	
SE	9.0						1	9.0	2.0
SSE	9.0						1	9.0	1.6
S	9.0						1	9.0	.9
SSW							0	0.0	
SW	18.1	9.0					3	27.1	2.6
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW		9.0					1	9.0	4.5
NNW							0	0.0	
CALM							3	27.0	
COL. TOTALS	45.1	27.0					11		1.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TC 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	20.0						2	20.0	2.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	30.0		10.0				4	40.0	3.6
SE							0	0.0	
SSE	10.0						1	10.0	2.4
S							0	0.0	
SSW	10.0						1	10.0	.7
SW							0	0.0	
WSW							0	0.0	
W			10.0				1	10.0	7.6
WNW							0	0.0	
NW	10.0						1	10.0	1.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	80.0		20.0				10		3.1

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TC 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.5
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	.8
E							0	0.0	
ESE							0	0.0	
SE	9.0		9.0				2	18.0	4.6
SSE							0	0.0	
S	9.0						1	9.0	.9
SSW	9.0						1	9.0	1.4
SW	9.0						1	9.0	1.1
WSW							0	0.0	
W	9.0		9.0				2	18.0	4.6
WNW	9.0						1	9.0	1.6
NW		9.0					1	9.0	3.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	72.0	9.0	18.0				11		2.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	10.0		20.0				3	30.0	4.6
SE	10.0	10.0					2	20.0	2.9
SSE		10.0					1	10.0	3.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0		10.0				2	20.0	4.2
WNW	10.0						1	10.0	1.6
NW	10.0						1	10.0	.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	20.0	30.0				10		3.3

200 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		9.0					1	9.0	5.9
SSE	18.1						2	18.1	.9
S	9.0						1	9.0	1.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	9.0		9.0				2	18.0	4.6
WNW	9.0						1	9.0	1.7
NW	9.0						1	9.0	1.8
NNW	9.0		9.0				2	18.0	5.3
CALM							0	0.0	
COL. TOTALS	72.1	9.0	18.0				11		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		10.0					1	10.0	5.6
SE	40.0	10.0					5	50.0	2.6
SSE							0	0.0	
S		10.0					1	10.0	3.9
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0			10.0			2	20.0	7.9
WNW							0	0.0	
NW							0	0.0	
NNW		10.0					1	10.0	3.5
CALM							0	0.0	
COL. TOTALS	50.0	40.0		10.0			10		4.1

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.6
NNE	9.0						1	9.0	1.4
NE							0	0.0	
ENE	9.0						1	9.0	1.2
E	9.0						1	9.0	.2
ESE			9.0				1	9.0	6.4
SE							0	0.0	
SSE							0	0.0	
S		9.0					1	9.0	3.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			9.0				1	9.0	7.5
WNW		9.0					1	9.0	3.0
NW	18.1						2	18.1	2.1
NNW			9.0				1	9.0	7.8
CALM							0	0.0	
COL. TOTALS	54.1	18.0	27.0				11		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		22.2	11.1				3	33.3	4.7
SE		22.2					2	22.2	4.5
SSE	11.1						1	11.1	2.9
S			11.1				1	11.1	7.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				11.1			1	11.1	15.6
WNW							0	0.0	
NW		11.1					1	11.1	3.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	55.5	22.2	11.1			9		5.7

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	2.6
ESE	9.0	9.0	9.0				3	27.0	3.7
SE	9.0						1	9.0	1.2
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	9.0						1	9.0	2.9
W							0	0.0	
WNW		9.0					1	9.0	4.9
NW	9.0	9.0	9.0				3	27.0	4.1
NNW			9.0				1	9.0	7.1
CALM							0	0.0	
COL. TOTALS	45.0	27.0	27.0				11		3.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		11.1					1	11.1	3.0
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			11.1				1	11.1	6.6
ESE			11.1				1	11.1	8.9
SE		11.1					1	11.1	4.8
SSE			11.1				1	11.1	6.4
S							0	0.0	
SSW		11.1	11.1				2	22.2	5.8
SW							0	0.0	
WSW							0	0.0	
W				11.1			1	11.1	13.6
WNW		11.1					1	11.1	4.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		44.4	44.4	11.1			9		6.6

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	9.0	9.0					2	18.0	3.2
SE		9.0					1	9.0	4.3
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	2.2
SW							0	0.0	
WSW			9.0				1	9.0	9.2
W		9.0	9.0				2	18.0	6.0
WNW		18.1					2	18.1	4.3
NW			9.0	9.0			2	18.0	8.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	18.0	45.1	27.0	9.0			11		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	9.4
NE							0	0.0	
ENE				11.1			1	11.1	10.3
E							0	0.0	
ESE							0	0.0	
SE			22.2				2	22.2	7.0
SSE							0	0.0	
S			11.1				1	11.1	7.4
SSW							0	0.0	
SW							0	0.0	
WSW		11.1					1	11.1	4.3
W					11.1		1	11.1	18.7
WNW		11.1	11.1				2	22.2	5.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		22.2	55.5	11.1	11.1		9		8.3

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	4.2
SE							0	0.0	
SSE			11.1				1	11.1	7.8
S							0	0.0	
SSW							0	0.0	
SW	11.1						1	11.1	2.0
WSW							0	0.0	
W		11.1	22.2				3	33.3	6.5
WNW		11.1	11.1				2	22.2	5.7
NW	11.1						1	11.1	1.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	33.3	44.4				9		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				12.5			1	12.5	10.3
ESE							0	0.0	
SE	12.5			12.5			2	25.0	6.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		12.5					1	12.5	5.2
WSW			12.5		12.5		2	25.0	15.1
W							0	0.0	
WNW							0	0.0	
NW				12.5			1	12.5	15.4
NNW		12.5					1	12.5	3.7
CALM							0	0.0	
COL. TOTALS	12.5	25.0	12.5	37.5	12.5		8		9.7

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		16.6					1	16.6	3.7
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			16.6				1	16.6	6.1
SSW							0	0.0	
SW							0	0.0	
WSW		33.3					2	33.3	4.7
W							0	0.0	
WNW		16.6	16.6				2	33.2	6.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		66.5	33.2				6		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	14.2						1	14.2	2.6
E			14.2				1	14.2	6.5
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		14.2		14.2			2	28.4	9.7
W							0	0.0	
WNW		14.2					1	14.2	4.3
NW	14.2		14.2				2	28.4	4.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4	28.4	28.4	14.2			7		5.9

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			25.0				1	25.0	6.3
WSW							0	0.0	
W							0	0.0	
WNW		25.0					1	25.0	5.0
NW		25.0	25.0				2	50.0	5.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		50.0	50.0				4		5.4

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MONTH OF MARCH 1979 MORNING

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TO
001-100	12.9		9.6	16.1	9.6	3.2		6.4				57
101-250	16.1		3.2	3.2	6.4		6.4					35
251-500			3.2	3.2								6
501-750												
TOTAL	29.0		16.0	22.5	16.0	3.2	6.4	6.4				

NO INVERSION

TOTAL NO. OF OCCURENCES

INVERSION TYPE												
1	3.2		3.2	12.9	3.2	3.2	3.2					28
2			12.9	6.4	12.9			6.4				38
3	22.5			3.2			3.2					28
4	3.2											3
5												

MONTH OF MARCH 1979 AFTERNOON

THICKNESS (METERS)	********** INVERSION BASE HEIGHT (METERS) ********** SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TO
001-100			4.5	4.5	4.5		4.5	31.8				49
101-250	4.5	4.5	4.5	9.0	4.5	4.5	4.5					36
251-500				4.5								4
501-750												
TOTAL	4.5	4.5	9.0	18.0	9.0	4.5	9.0	31.8				

NO INVERSION

TOTAL NO. OF OCCURENCES

INVERSION TYPE												
1			10.0	5.0	10.0		10.0	35.0				70
2		5.0		10.0		5.0						20
3	5.0			5.0								10
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR MARCH 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	2	1
251- 500	2	3
501- 750	1	3
751-1000	0	0
1001-1500	0	0
>1500	0	3
TOTAL	10	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	2.6	3.6
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.96	-00.87

****

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

SURFACE WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	.4
S	11.1						1	11.1	.9
SSW	11.1						1	11.1	.4
SW							0	0.0	
WSW	11.1						1	11.1	2.0
W							0	0.0	
WNW	11.1						1	11.1	1.3
NW	11.1						1	11.1	2.4
NNW							0	0.0	
CALM							2	22.0	
COL. TOTALS	77.7						9		.8

SURFACE WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		10.0					1	10.0	4.5
SSW		10.0					1	10.0	5.0
SW	10.0						1	10.0	2.2
WSW		10.0					1	10.0	3.6
W	30.0						3	30.0	2.1
WNW		20.0					2	20.0	3.8
NW	10.0						1	10.0	.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					10		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

100 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	1.7
NNE	11.1						1	11.1	.2
NE							0	0.0	
ENE	11.1						1	11.1	1.6
E							0	0.0	
ESE	11.1						1	11.1	1.6
SE							0	0.0	
SSE	11.1						1	11.1	.5
S	11.1						1	11.1	1.7
SSW							0	0.0	
SW							0	0.0	
WSW	11.1						1	11.1	.8
W							0	0.0	
WNW		11.1					1	11.1	3.3
NW							0	0.0	
NNW			11.1				1	11.1	9.0
CALM							0	0.0	
COL. TOTALS	77.7	11.1	11.1				9		2.2

100 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			10.0				1	10.0	6.4
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0		10.0				2	20.0	6.0
WNW		10.0					1	10.0	3.7
NW	10.0	20.0	30.0				6	60.0	5.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	30.0	50.0				10		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

200 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	2.7
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1	11.1					2	22.2	2.5
SE	11.1	11.1					2	22.2	2.5
SSE	22.2						2	22.2	2.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW		11.1					1	11.1	5.1
NW							0	0.0	
NNW			11.1				1	11.1	7.7
CALM							0	0.0	
COL. TOTALS	55.5	33.3	11.1				9		3.2

200 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			10.0				1	10.0	8.4
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			10.0				1	10.0	7.9
WNW	10.0		10.0				2	20.0	5.5
NW	20.0	10.0	10.0	20.0			6	60.0	6.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	10.0	40.0	20.0			10		6.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

300 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		11.1					1	11.1	3.6
ESE		11.1					1	11.1	3.6
SE		11.1					1	11.1	3.9
SSE	11.1	11.1					2	22.2	3.3
S		11.1					1	11.1	4.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW			11.1				1	11.1	8.9
NW							0	0.0	
NNW		11.1	11.1				2	22.2	7.2
CALM							0	0.0	
COL. TOTALS	11.1	66.6	22.2				9		5.0

300 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			10.0				1	10.0	7.6
SW							0	0.0	
WSW							0	0.0	
W		10.0					1	10.0	5.4
WNW	10.0						1	10.0	1.4
NW	20.0	10.0	20.0	10.0	10.0		7	70.0	7.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	20.0	30.0	10.0	10.0		10		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

500 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	3.8
SE		11.1	11.1	11.1			3	33.3	7.5
SSE	22.2						2	22.2	2.7
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W			11.1				1	11.1	8.8
WNW							0	0.0	
NW							0	0.0	
NNW	11.1		11.1				2	22.2	5.7
CALM							0	0.0	
COL. TOTALS	33.3	22.2	33.3	11.1			9		5.7

500 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		10.0					1	10.0	5.1
WSW							0	0.0	
W							0	0.0	
WNW	10.0	10.0	10.0				3	30.0	5.0
NW	10.0	20.0	10.0	10.0	10.0		6	60.0	8.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0	20.0	10.0	10.0		10		6.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

750 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			11.1	11.1			2	22.2	8.8
SSE		11.1					1	11.1	4.4
S		11.1	11.1				2	22.2	5.6
SSW							0	0.0	
SW		11.1					1	11.1	4.3
WSW							0	0.0	
W			22.2				2	22.2	7.2
WNW							0	0.0	
NW							0	0.0	
NNW			11.1				1	11.1	9.8
CALM							0	0.0	
COL. TOTALS		33.3	55.5	11.1			9		6.8

750 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	2.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			10.0				1	10.0	8.6
WSW							0	0.0	
W		10.0		10.0			2	20.0	9.3
WNW		10.0	10.0	10.0			3	30.0	8.2
NW	10.0				10.0		2	20.0	12.5
NNW			10.0				1	10.0	6.1
CALM							0	0.0	
COL. TOTALS	20.0	20.0	30.0	20.0	10.0		10		8.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1000 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			11.1	11.1			2	22.2	10.9
SSE							0	0.0	
S	11.1						1	11.1	2.7
SSW		11.1	11.1				2	22.2	5.1
SW			11.1				1	11.1	7.7
WSW							0	0.0	
W				22.2			2	22.2	11.8
WNW							0	0.0	
NW				11.1			1	11.1	11.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	33.3	44.4			9		8.6

1000 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			11.1				1	11.1	6.8
W		11.1					1	11.1	5.4
WNW					22.2		2	22.2	23.1
NW		22.2	22.2				4	44.4	6.1
NNW		11.1					1	11.1	3.7
CALM							0	0.0	
COL. TOTALS		44.4	33.3		22.2		9		9.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

1500 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			11.1				1	11.1	7.3
SSE				11.1			1	11.1	11.1
S							0	0.0	
SSW		11.1					1	11.1	4.7
SW							0	0.0	
WSW		11.1		11.1			2	22.2	7.3
W				11.1	11.1		2	22.2	16.2
WNW	11.1						1	11.1	.4
NW			11.1				1	11.1	7.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	22.2	22.2	33.3	11.1		9		8.6

1500 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		28.5					2	28.5	4.0
WSW							0	0.0	
W			14.2				1	14.2	7.9
WNW	14.2	42.8					4	57.0	3.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	71.3	14.2				7		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAPS - MET.

2000 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	14.2						1	14.2	2.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			14.2				1	14.2	6.3
SSW				14.2			1	14.2	13.7
SW	14.2						1	14.2	2.1
WSW		14.2					1	14.2	5.8
W				14.2			1	14.2	10.5
WNW							0	0.0	
NW							0	0.0	
NNW			14.2				1	14.2	9.1
CALM							0	0.0	
COL. TOTALS	28.4	14.2	28.4	28.4			7		7.1

2000 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	16.6						1	16.6	2.9
WSW							0	0.0	
W			16.6				1	16.6	8.7
WNW	16.6		33.3				3	49.9	4.7
NW		16.6					1	16.6	5.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2	16.6	49.9				6		5.2

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MONTH OF APRIL 1979 MORNING

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100	4.7		14.2	4.7		9.5	9.5					42.6
101-250	19.0			9.5	9.5	4.7						42.7
251-500					4.7		4.7					9.4
501-750												
TOTAL	23.7		14.2	14.2	14.2	14.2	14.2					
NO INVERSION												4.0
								TOTAL NO. OF OCCURENCES				20
INVERSION TYPE												
1	5.0		15.0		5.0	5.0	5.0					35.0
2				10.0	10.0	10.0	10.0					40.0
3	20.0			5.0								25.0
4												
5												

MONTH OF APRIL 1979 AFTERNOON

THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	> THAN 3000	TOTAL
	********** INVERSION BASE HEIGHT (METERS) **********											
001-100					16.6							16.6
101-250								16.6	16.6			33.2
251-500												
501-750												
TOTAL					16.6			16.6	16.6			
NO INVERSION												50.0
								TOTAL NO. OF OCCURENCES				3
INVERSION TYPE												
1					33.3							33.3
2								33.3	33.3			66.6
3												
4												
5												

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: MISSOULA - FIRE LAB - MAFS - MET.

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR APRIL 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	2	0
251- 500	3	0
501- 750	2	0
751-1000	0	2
1001-1500	0	0
>1500	0	4
TOTAL	9	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	3.0	8.5
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.51	-00.92

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.6
ENE							0	0.0	
E	9.0						1	9.0	1.1
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		9.0					1	9.0	4.5
WSW	9.0						1	9.0	.9
W	9.0						1	9.0	.9
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							6	54.0	
COL. TOTALS	36.0	9.0					11		.8

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.9
ENE	10.0						1	10.0	.9
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	10.0		10.0				2	20.0	4.4
WNW							0	0.0	
NW	20.0						2	20.0	1.8
NNW							0	0.0	
CALM							4	40.0	
COL. TOTALS	50.0		10.0				10		1.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.8
ENE							0	0.0	
E							0	0.0	
ESE	9.0						1	9.0	1.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	.7
SW		9.0	9.0				2	18.0	5.5
WSW	18.1						2	18.1	1.3
W	9.0						1	9.0	.6
WNW	27.2						3	27.2	.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.3	9.0	9.0				11		1.7

100 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	2.1
ENE	20.0						2	20.0	1.3
E							0	0.0	
ESE							0	0.0	
SE	10.0						1	10.0	.3
SSE							0	0.0	
S							0	0.0	
SSW	10.0						1	10.0	1.4
SW							0	0.0	
WSW							0	0.0	
W	10.0						1	10.0	.8
WNW	20.0	10.0					3	30.0	2.3
NW							0	0.0	
NNW	10.0						1	10.0	1.2
CALM							0	0.0	
COL. TOTALS	90.0	10.0					10		1.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	2.1
ESE							0	0.0	
SE	18.1						2	18.1	.4
SSE							0	0.0	
S							0	0.0	
SSW	27.2						3	27.2	1.0
SW	9.0		9.0				2	18.0	4.3
WSW							0	0.0	
W	18.1						2	18.1	.6
WNW							0	0.0	
NW	9.0						1	9.0	2.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	90.4		9.0				11		1.7

200 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	20.0						2	20.0	.7
NNE	20.0						2	20.0	1.0
NE	10.0						1	10.0	.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	10.0						1	10.0	1.6
WSW							0	0.0	
W							0	0.0	
WNW		10.0					1	10.0	4.4
NW	10.0						1	10.0	1.0
NNW	20.0						2	20.0	1.3
CALM							0	0.0	
COL. TOTALS	90.0	10.0					10		1.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.4
ENE							0	0.0	
E	9.0						1	9.0	.4
ESE							0	0.0	
SE	9.0						1	9.0	1.5
SSE	9.0						1	9.0	.5
S	9.0						1	9.0	2.6
SSW	18.1						2	18.1	.6
SW	9.0						1	9.0	.5
WSW	9.0						1	9.0	.3
W		9.0					1	9.0	5.2
WNW	9.0						1	9.0	1.0
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	90.1	9.0					11		1.2

300 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	10.0						1	10.0	2.3
NNE	20.0						2	20.0	1.6
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	10.0						1	10.0	2.1
W	10.0		10.0				2	20.0	4.4
WNW	10.0						1	10.0	2.5
NW	20.0						2	20.0	1.1
NNW	10.0						1	10.0	1.3
CALM							0	0.0	
COL. TOTALS	90.0		10.0				10		2.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	18.1	9.0					3	27.1	1.9
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	4.6
S	9.0						1	9.0	.6
SSW	18.1						2	18.1	1.4
SW		9.0					1	9.0	3.1
WSW			9.0				1	9.0	9.4
W	9.0						1	9.0	1.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	63.2	27.0	9.0				11		2.6

500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0						1	10.0	2.4
ESE							0	0.0	
SE	10.0						1	10.0	.4
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	10.0						1	10.0	1.4
WSW							0	0.0	
W			10.0				1	10.0	9.7
WNW	10.0						1	10.0	2.5
NW	20.0						2	20.0	1.5
NNW	20.0						2	20.0	1.9
CALM							1	10.0	
COL. TOTALS	80.0		10.0				10		2.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	9.0						1	9.0	1.6
ESE	9.0						1	9.0	2.4
SE							0	0.0	
SSE							0	0.0	
S	9.0	18.1	9.0				4	36.1	5.3
SSW		9.0	9.0				2	18.0	6.3
SW							0	0.0	
WSW		9.0		9.0			2	18.0	8.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			9.0				1	9.0	6.5
CALM							0	0.0	
COL. TOTALS	27.0	36.1	27.0	9.0			11		5.6

750 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0						1	10.0	.9
SSE		10.0					1	10.0	5.7
S							0	0.0	
SSW		10.0					1	10.0	3.1
SW	10.0						1	10.0	.9
WSW							0	0.0	
W	20.0						2	20.0	2.4
WNW	10.0						1	10.0	2.7
NW	10.0	10.0					2	20.0	2.4
NNW	10.0						1	10.0	1.6
CALM							0	0.0	
COL. TOTALS	70.0	30.0					10		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		9.0					1	9.0	4.6
S			9.0				1	9.0	6.1
SSW		9.0					1	9.0	4.9
SW		9.0					1	9.0	3.0
WSW			9.0				1	9.0	8.7
W		9.0	9.0	9.0			3	27.0	8.7
WNW	9.0	9.0					2	18.0	3.3
NW							0	0.0	
NNW			9.0				1	9.0	7.4
CALM							0	0.0	
COL. TOTALS	9.0	45.0	36.0	9.0			11		6.1

1000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	11.1						1	11.1	2.6
S		11.1					1	11.1	5.5
SSW		11.1					1	11.1	3.3
SW							0	0.0	
WSW							0	0.0	
W	11.1	11.1	11.1				3	33.3	5.2
WNW		11.1					1	11.1	5.0
NW	11.1	11.1					2	22.2	2.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	55.5	11.1				9		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	20.0						2	20.0	2.1
WSW			10.0	10.0			2	20.0	9.5
W			30.0		10.0		4	40.0	11.7
WNW			10.0				1	10.0	7.7
NW			10.0				1	10.0	7.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0		60.0	10.0	10.0		10		8.5

1500 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			11.1				1	11.1	9.4
W		22.2	22.2		11.1		5	55.5	8.5
WNW			11.1				1	11.1	6.7
NW		11.1	11.1				2	22.2	5.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		33.3	55.5		11.1		9		7.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	12.5						1	12.5	2.3
SW							0	0.0	
WSW							0	0.0	
W			12.5	25.0			3	37.5	10.5
WNW			25.0				2	25.0	8.0
NW			25.0				2	25.0	8.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5		62.5	25.0			8		8.3

2000 METER LEVEL WINDS AFTERNOON OCTOBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			11.1	11.1			2	22.2	10.2
W			33.3	11.1			4	44.4	9.1
WNW			11.1				1	11.1	6.8
NW		11.1	11.1				2	22.2	6.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		11.1	66.6	22.2			9		8.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	2.2
ESE	11.1						1	11.1	2.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	11.1						1	11.1	1.3
WSW							0	0.0	
W	11.1						1	11.1	1.6
WNW							0	0.0	
NW							0	0.0	
NNW	11.1						1	11.1	.9
CALM							4	44.0	
COL. TOTALS	55.5						9		.9

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.4
NNE							0	0.0	
NE	9.0						1	9.0	2.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	2.7
SSW							0	0.0	
SW	9.0						1	9.0	1.6
WSW	9.0						1	9.0	.9
W	9.0						1	9.0	2.4
WNW	9.0						1	9.0	1.1
NW	9.0						1	9.0	.9
NNW	9.0						1	9.0	1.1
CALM							2	18.0	
COL. TOTALS	81.0						11		1.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						1	11.1	1.0
E	11.1						1	11.1	.1
ESE							0	0.0	
SE	11.1						1	11.1	.5
SSE	11.1						1	11.1	2.1
S							0	0.0	
SSW							0	0.0	
SW		11.1					1	11.1	3.3
WSW		11.1					1	11.1	3.2
W							0	0.0	
WNW	11.1						1	11.1	1.1
NW							0	0.0	
NNW	22.2						2	22.2	.3
CALM							0	0.0	
COL. TOTALS	77.7	22.2					9		1.3

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	18.1						2	18.1	1.2
NNE							0	0.0	
NE		9.0					1	9.0	4.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	18.1						2	18.1	1.5
WSW	9.0						1	9.0	.4
W		9.0					1	9.0	3.3
WNW	27.2						3	27.2	1.5
NW							0	0.0	
NNW	9.0						1	9.0	1.5
CALM							0	0.0	
COL. TOTALS	81.4	18.0					11		1.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	11.1		11.1				2	22.2	3.4
SE	11.1						1	11.1	.4
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	11.1	11.1					2	22.2	3.5
WSW							0	0.0	
W							0	0.0	
WNW	22.2						2	22.2	.4
NW	22.2						2	22.2	1.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	77.7	11.1	11.1				9		2.0

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		9.0					1	9.0	4.2
E							0	0.0	
ESE	9.0						1	9.0	.7
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	.9
SW		9.0					1	9.0	3.1
WSW							0	0.0	
W	9.0			9.0			2	18.0	6.2
WNW	36.3						4	36.3	1.0
NW	9.0						1	9.0	2.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	72.3	18.0		9.0			11		2.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	11.1						1	11.1	.8
NNE							0	0.0	
NE							0	0.0	
ENE	11.1						1	11.1	1.0
E	11.1						1	11.1	.6
ESE							0	0.0	
SE	22.2						2	22.2	1.5
SSE							0	0.0	
S	11.1						1	11.1	2.8
SSW							0	0.0	
SW		11.1					1	11.1	5.8
WSW							0	0.0	
W	11.1						1	11.1	1.7
WNW	11.1						1	11.1	2.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	88.8	11.1					9		1.9

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	5.2
ESE	9.0						1	9.0	.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	1.8
SW		9.0					1	9.0	3.5
WSW	9.0						1	9.0	.9
W	9.0		9.0				2	18.0	4.1
WNW							0	0.0	
NW	18.1						2	18.1	1.6
NNW	18.1						2	18.1	1.8
CALM							0	0.0	
COL. TOTALS	72.2	18.0	9.0				11		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1						1	11.1	1.5
NE							0	0.0	
ENE	22.2	11.1					3	33.3	1.9
E							0	0.0	
ESE			11.1				1	11.1	6.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	11.1		11.1				2	22.2	5.8
WSW							0	0.0	
W		11.1					1	11.1	3.6
WNW							0	0.0	
NW							0	0.0	
NNW		11.1					1	11.1	3.5
CALM							0	0.0	
COL. TOTALS	44.4	33.3	22.2				9		3.6

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	2.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	2.5
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	2.0
SW	9.0						1	9.0	1.0
WSW	9.0	9.0					2	18.0	2.7
W		18.1					2	18.1	3.7
WNW	9.0						1	9.0	.9
NW			9.0				1	9.0	6.8
NNW	9.0						1	9.0	2.7
CALM							0	0.0	
COL. TOTALS	63.0	27.1	9.0				11		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			11.1				1	11.1	8.9
ESE		11.1					1	11.1	4.1
SE							0	0.0	
SSE							0	0.0	
S	11.1						1	11.1	1.5
SSW							0	0.0	
SW							0	0.0	
WSW		22.2	11.1				3	33.3	4.8
W		11.1					1	11.1	3.7
WNW							0	0.0	
NW		11.1					1	11.1	5.4
NNW		11.1					1	11.1	3.3
CALM							0	0.0	
COL. TOTALS	11.1	66.6	22.2				9		4.6

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0			9.0			2	18.0	6.5
E							0	0.0	
ESE	9.0						1	9.0	2.4
SE							0	0.0	
SSE		9.0					1	9.0	5.1
S		9.0					1	9.0	3.1
SSW							0	0.0	
SW	9.0						1	9.0	1.4
WSW							0	0.0	
W	9.0	9.0					2	18.0	2.9
WNW	9.0		9.0				2	18.0	5.4
NW	9.0						1	9.0	2.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	54.0	27.0	9.0	9.0			11		3.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				12.5			1	12.5	15.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	12.5		12.5				2	25.0	4.9
SSW							0	0.0	
SW							0	0.0	
WSW	12.5						1	12.5	2.6
W			12.5	12.5			2	25.0	8.6
WNW			12.5				1	12.5	8.3
NW							0	0.0	
NNW		12.5					1	12.5	3.2
CALM							0	0.0	
COL. TOTALS	25.0	12.5	37.5	25.0			8		7.0

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0		9.0			2	18.0	8.5
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			18.1				2	18.1	6.6
SW							0	0.0	
WSW			9.0				1	9.0	6.7
W		9.0	18.1	9.0	9.0		5	45.1	9.2
WNW		9.0					1	9.0	3.6
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		27.0	45.2	18.0	9.0		11		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	16.6						1	16.6	2.9
SW	16.6						1	16.6	2.3
WSW				16.6			1	16.6	12.5
W			16.6	16.6	16.6		3	49.8	13.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.2		16.6	33.2	16.6		6		9.7

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE				11.1			1	11.1	12.3
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	9.9
SSW							0	0.0	
SW							0	0.0	
WSW	11.1			33.3	11.1		5	55.5	11.9
W							0	0.0	
WNW	11.1	11.1					2	22.2	3.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	11.1	44.4	11.1		9		9.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE					20.0		1	20.0	21.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		20.0					1	20.0	5.6
SW							0	0.0	
WSW							0	0.0	
W	20.0						1	20.0	2.2
WNW					40.0		2	40.0	18.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0			60.0		5		13.2

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E						14.2	1	14.2	30.3
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	14.2						1	14.2	4.0
SSW		14.2					1	14.2	3.8
SW			14.2				1	14.2	7.9
WSW							0	0.0	
W					28.5	14.2	3	42.7	24.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2	14.2	14.2		28.5	28.4	7		16.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	11.1						1	11.1	.4
ESE	11.1						1	11.1	2.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			11.1				1	11.1	7.2
SW							0	0.0	
WSW	11.1						1	11.1	.9
W	22.2	11.1					3	33.3	1.8
WNW							0	0.0	
NW	11.1						1	11.1	1.3
NNW							0	0.0	
CALM							1	11.0	
COL. TOTALS	66.6	11.1	11.1				9		1.9

SURFACE WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	9.0						1	9.0	1.8
NE							0	0.0	
ENE							0	0.0	
E	9.0	9.0					2	18.0	2.4
ESE							0	0.0	
SE	9.0						1	9.0	1.6
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	.9
SW							0	0.0	
WSW	18.1						2	18.1	.9
W		9.0					1	9.0	4.5
WNW	9.0						1	9.0	2.0
NW		9.0					1	9.0	4.5
NNW	9.0						1	9.0	.7
CALM							0	0.0	
COL. TOTALS	72.1	27.0					11		2.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			11.1				1	11.1	7.1
SW	22.2						2	22.2	1.9
WSW	11.1		11.1				2	22.2	4.1
W	11.1						1	11.1	1.8
WNW	11.1	11.1					2	22.2	2.8
NW	11.1						1	11.1	.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.6	11.1	22.2				9		3.0

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE			9.0				1	9.0	6.7
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	27.2						3	27.2	1.1
WSW	27.2						3	27.2	1.0
W		9.0					1	9.0	3.6
WNW	9.0						1	9.0	.9
NW	18.1						2	18.1	2.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.5	9.0	9.0				11		2.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE							0	0.0	
NE	11.1						1	11.1	2.3
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	8.0
SSW	11.1						1	11.1	1.2
SW	11.1						1	11.1	1.6
WSW			11.1				1	11.1	9.5
W							0	0.0	
WNW	11.1	11.1					2	22.2	3.0
NW		22.2					2	22.2	3.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	44.4	33.3	22.2				9		4.0

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N	9.0						1	9.0	1.5
NNE							0	0.0	
NE							0	0.0	
ENE				9.0			1	9.0	15.7
E							0	0.0	
ESE							0	0.0	
SE	9.0						1	9.0	1.0
SSE	9.0						1	9.0	1.4
S	9.0						1	9.0	.7
SSW	9.0						1	9.0	2.4
SW	9.0						1	9.0	.7
WSW	9.0						1	9.0	2.7
W	9.0						1	9.0	2.3
WNW		9.0					1	9.0	3.7
NW		9.0					1	9.0	4.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	72.0	18.0		9.0			11		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE		11.1					1	11.1	3.5
NE							0	0.0	
ENE	11.1						1	11.1	1.9
E							0	0.0	
ESE							0	0.0	
SE		11.1					1	11.1	3.9
SSE							0	0.0	
S				11.1			1	11.1	14.1
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	11.1		11.1				2	22.2	3.4
WNW	11.1	11.1	11.1				3	33.3	4.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	22.2	11.1			9		4.8

300 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0			
N							0	0.0	
NNE	9.0						1	9.0	1.3
NE							0	0.0	
ENE	9.0						1	9.0	2.6
E	9.0			9.0			2	18.0	7.1
ESE							0	0.0	
SE							0	0.0	
SSE	9.0						1	9.0	1.6
S							0	0.0	
SSW		9.0					1	9.0	5.9
SW							0	0.0	
WSW		9.0					1	9.0	5.0
W	9.0	9.0					2	18.0	3.6
WNW		9.0					1	9.0	4.5
NW							0	0.0	
NNW	9.0						1	9.0	1.9
CALM							0	0.0	
COL. TOTALS	54.0	36.0		9.0			11		4.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		11.1					1	11.1	3.3
E							0	0.0	
ESE	11.1						1	11.1	1.3
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW				11.1			1	11.1	10.1
SW	11.1						1	11.1	.6
WSW		11.1	11.1				2	22.2	7.3
W	11.1	11.1					2	22.2	2.8
WNW					11.1		1	11.1	19.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	11.1	11.1	11.1		9		6.1

500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.3
ENE		10.0		10.0			2	20.0	8.6
E	10.0						1	10.0	2.1
ESE							0	0.0	
SE	10.0						1	10.0	2.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW			10.0				1	10.0	6.0
WSW							0	0.0	
W	10.0	10.0	10.0				3	30.0	4.9
WNW							0	0.0	
NW		10.0					1	10.0	4.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	30.0	20.0	10.0			10		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				14.2			1	14.2	10.6
ESE							0	0.0	
SE							0	0.0	
SSE	14.2						1	14.2	1.6
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			14.2				1	14.2	8.3
W			14.2	14.2			2	28.4	8.6
WNW						14.2	1	14.2	59.6
NW							0	0.0	
NNW	14.2						1	14.2	.8
CALM							0	0.0	
COL. TOTALS	28.4		28.4	28.4		14.2	7		14.0

750 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		10.0	10.0				2	20.0	5.2
ESE							0	0.0	
SE		10.0					1	10.0	4.5
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			10.0				1	10.0	9.6
W		20.0	20.0				4	40.0	6.3
WNW	10.0	10.0					2	20.0	2.2
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	50.0	40.0				10		5.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			20.0				1	20.0	6.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			20.0		20.0		2	40.0	14.4
W				40.0			2	40.0	14.2
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			40.0	40.0	20.0		5		12.6

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				25.0			2	25.0	12.5
ESE							0	0.0	
SE							0	0.0	
SSE		12.5					1	12.5	3.1
S				12.5			1	12.5	15.3
SSW							0	0.0	
SW							0	0.0	
WSW				12.5			1	12.5	10.5
W		12.5		12.5			2	25.0	10.0
WNW							0	0.0	
NW		12.5					1	12.5	3.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		37.5		62.5			8		9.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE				25.0			1	25.0	11.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				50.0	25.0		3	75.0	16.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				75.0	25.0		4		14.9

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	14.2						1	14.2	2.9
ESE			14.2				1	14.2	7.2
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			14.2				1	14.2	7.1
W			14.2	14.2			2	28.4	11.6
WNW				14.2			1	14.2	12.0
NW			14.2				1	14.2	6.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	14.2		56.8	28.4			7		8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE				50.0			1	50.0	11.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W					50.0		1	50.0	18.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				50.0	50.0		2		14.7

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		25.0					1	25.0	4.8
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW					25.0		1	25.0	16.9
W			25.0				1	25.0	9.4
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						1	25.0	1.1
CALM							0	0.0	
COL. TOTALS	25.0	25.0	25.0		25.0		4		8.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		7.6					1	7.6	5.6
ENE							0	0.0	
E							0	0.0	
ESE	7.6						1	7.6	.4
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	7.6						1	7.6	2.4
NW							0	0.0	
NNW	7.6						1	7.6	.4
CALM							9	69.0	
COL. TOTALS	22.8	7.6					13		.6

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3						1	8.3	.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	16.6						2	16.6	1.1
SSW	8.3						1	8.3	.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							8	66.0	
COL. TOTALS	33.2						12		.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	23.0		7.6				4	30.6	2.8
SE	38.4	7.6					6	46.0	2.1
SSE	7.6						1	7.6	.4
S	7.6						1	7.6	1.7
SSW							0	0.0	
SW							0	0.0	
WSW	7.6						1	7.6	.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	84.2	7.6	7.6				13		2.0

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	8.3						1	8.3	.6
ENE	16.6						2	16.6	.6
E	16.6						2	16.6	1.2
ESE	8.3						1	8.3	1.2
SE	16.6						2	16.6	2.2
SSE							0	0.0	
S							0	0.0	
SSW	8.3						1	8.3	.5
SW							0	0.0	
WSW	8.3						1	8.3	1.5
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	.4
NNW	8.3						1	8.3	1.5
CALM							0	0.0	
COL. TOTALS	99.6						12		1.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	7.6						1	7.6	1.9
ESE	23.0	7.6					4	30.6	3.1
SE	7.6	23.0					4	30.6	3.4
SSE							0	0.0	
S	7.6						1	7.6	1.4
SSW	15.3						2	15.3	.8
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	7.6						1	7.6	.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	68.7	30.6					13		2.4

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.0
NNE	8.3						1	8.3	.8
NE	8.3						1	8.3	.8
ENE	8.3						1	8.3	.7
E							0	0.0	
ESE	8.3						1	8.3	2.1
SE	8.3						1	8.3	2.5
SSE	8.3						1	8.3	1.9
S	8.3						1	8.3	2.3
SSW							0	0.0	
SW							0	0.0	
WSW	8.3						1	8.3	.7
W	8.3						1	8.3	1.2
WNW							0	0.0	
NW	8.3						1	8.3	1.3
NNW	8.3						1	8.3	2.2
CALM							0	0.0	
COL. TOTALS	99.6						12		1.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	7.6						1	7.6	.9
E	7.6						1	7.6	.7
ESE	23.0	7.6					4	30.6	1.9
SE	15.3	15.3					4	30.6	2.8
SSE	15.3						2	15.3	2.4
S							0	0.0	
SSW	7.6						1	7.6	2.9
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	76.4	22.9					13		2.1

300 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.9
NNE							0	0.0	
NE	8.3						1	8.3	.8
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	1.6
SE	8.3						1	8.3	1.6
SSE							0	0.0	
S							0	0.0	
SSW	8.3						1	8.3	1.0
SW	8.3						1	8.3	.4
WSW	8.3						1	8.3	.4
W	8.3						1	8.3	2.0
WNW	8.3						1	8.3	.2
NW	16.6						2	16.6	1.3
NNW	8.3						1	8.3	1.7
CALM							0	0.0	
COL. TOTALS	91.3	8.3					12		1.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	15.3						2	15.3	2.3
NE	7.6						1	7.6	.3
ENE							0	0.0	
E	7.6						1	7.6	1.6
ESE	7.6						1	7.6	2.6
SE	7.6		7.6				2	15.2	5.3
SSE	15.3						2	15.3	.8
S	15.3	7.6					3	22.9	1.9
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	7.6						1	7.6	1.1
CALM							0	0.0	
COL. TOTALS	83.9	7.6	7.6				13		2.1

500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	8.3						1	8.3	2.5
E							0	0.0	
ESE	8.3	8.3					2	16.6	2.6
SE	25.0						3	25.0	1.5
SSE							0	0.0	
S	8.3						1	8.3	1.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	8.3	16.6					3	24.9	3.5
NNW	8.3	8.3					2	16.6	3.3
CALM							0	0.0	
COL. TOTALS	66.5	33.2					12		2.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3		8.3				2	16.6	4.7
SE	8.3	8.3					2	16.6	3.4
SSE		16.6					2	16.6	4.7
S	8.3	16.6					3	24.9	2.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W	8.3						1	8.3	1.6
WNW	8.3						1	8.3	1.7
NW	8.3						1	8.3	2.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	49.8	41.5	8.3				12		3.3

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		8.3					1	8.3	3.3
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		8.3					1	8.3	3.1
ESE	16.6		8.3				3	24.9	4.2
SE							0	0.0	
SSE	8.3	8.3					2	16.6	3.6
S							0	0.0	
SSW			8.3				1	8.3	7.9
SW							0	0.0	
WSW			8.3				1	8.3	6.4
W			8.3				1	8.3	7.0
WNW		8.3					1	8.3	5.3
NW			8.3				1	8.3	6.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	33.2	41.5				12		4.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		11.1					1	11.1	4.2
SE	11.1	11.1					2	22.2	2.5
SSE			22.2				2	22.2	8.4
S				11.1			1	11.1	10.8
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	11.1	11.1					2	22.2	3.4
NW							0	0.0	
NNW	11.1						1	11.1	2.2
CALM							0	0.0	
COL. TOTALS	33.3	33.3	22.2	11.1			9		5.1

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3			8.3			2	16.6	5.6
SE		8.3					1	8.3	3.6
SSE	8.3	8.3					2	16.6	2.6
S							0	0.0	
SSW				8.3			1	8.3	12.3
SW							0	0.0	
WSW		8.3	8.3				2	16.6	6.2
W				8.3			1	8.3	10.4
WNW	8.3	8.3	8.3				3	24.9	4.8
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	33.2	16.6	24.9			12		5.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		16.6					1	16.6	5.1
W		16.6	16.6				2	33.2	5.7
WNW		16.6					1	16.6	3.7
NW	16.6	16.6					2	33.2	3.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	66.4	16.6				6		4.4

1500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		10.0					1	10.0	3.6
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			20.0				2	20.0	7.8
W	10.0	10.0	20.0				4	40.0	5.8
WNW			10.0	10.0			2	20.0	8.1
NW							0	0.0	
NNW		10.0					1	10.0	5.3
CALM							0	0.0	
COL. TOTALS	10.0	30.0	50.0	10.0			10		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW			50.0				1	50.0	8.8
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW			50.0				1	50.0	7.5
CALM							0	0.0	
COL. TOTALS			100.0				2		8.1

2000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	12.5						1	12.5	2.7
E		12.5					1	12.5	3.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				12.5			1	12.5	11.1
W		12.5					1	12.5	4.9
WNW				25.0			2	25.0	12.7
NW							0	0.0	
NNW			25.0				2	25.0	7.3
CALM							0	0.0	
COL. TOTALS	12.5	25.0	25.0	37.5			8		7.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 MIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	1.1
NNE							0	0.0	
NE	8.3						1	8.3	.9
ENE							0	0.0	
E	16.6						2	16.6	1.1
ESE							0	0.0	
SE	8.3						1	8.3	.2
SSE		8.3					1	8.3	4.5
S							0	0.0	
SSW							0	0.0	
SW	8.3						1	8.3	1.6
WSW							0	0.0	
W							0	0.0	
WNW	16.6						2	16.6	2.0
NW							0	0.0	
NNW	16.6						2	16.6	1.5
CALM							1	8.0	
COL. TOTALS	83.0	8.3					12		1.4

SURFACE WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	2.2
SE	8.3						1	8.3	1.8
SSE							0	0.0	
S							0	0.0	
SSW	16.6		8.3				3	24.9	3.0
SW	16.6						2	16.6	1.0
WSW							0	0.0	
W	16.6	8.3					3	24.9	2.5
WNW							0	0.0	
NW	16.6						2	16.6	2.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	83.0	8.3	8.3				12		2.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 MIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	16.6						2	16.6	.5
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	.3
SE	16.6						2	16.6	.9
SSE	8.3						1	8.3	1.4
S		8.3					1	8.3	3.0
SSW	8.3	8.3					2	16.6	2.4
SW		8.3					1	8.3	3.4
WSW		8.3					1	8.3	5.7
W							0	0.0	
WNW							0	0.0	
NW	8.3						1	8.3	2.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	66.4	33.2					12		1.9

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND **********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	8.3						1	8.3	.6
SSW							0	0.0	
SW			8.3				1	8.3	7.2
WSW							0	0.0	
W	8.3	8.3					2	16.6	3.2
WNW	8.3						1	8.3	1.6
NW	41.6	8.3					6	49.9	1.7
NNW		8.3					1	8.3	3.2
CALM							0	0.0	
COL. TOTALS	66.5	24.9	8.3				12		2.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.3
NNE							0	C.C	
NE							0	0.0	
ENE	8.3						1	8.3	1.C
E							0	C.0	
ESE							0	0.0	
SE		8.3					1	8.3	3.2
SSE	8.3	8.3					2	16.6	3.3
S							0	0.0	
SSW		8.3					1	8.3	5.8
SW	8.3	8.3					2	16.6	3.4
WSW	8.3						1	8.3	1.3
W	8.3	8.3					2	16.6	1.7
WNW							0	C.0	
NW							0	0.0	
NNW	8.3						1	8.3	.5
CALM							0	C.C	
COL. TOTALS	58.1	41.5					12		2.5

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	.8
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						1	8.3	1.3
SSE							0	0.0	
S	8.3						1	8.3	.5
SSW		8.3					1	8.3	4.1
SW			8.3				1	8.3	6.7
WSW							0	0.0	
W		8.3					1	8.3	3.1
WNW			8.3				1	8.3	7.3
NW		16.6					2	16.6	3.7
NNW	16.6	8.3					3	24.9	2.2
CALM							0	0.0	
COL. TOTALS	41.5	41.5	16.6				12		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	C.0	
NNE	9.0						1	9.0	2.3
NE							C	C.C	
ENE							0	C.C	
E		9.0					1	9.0	3.7
ESE							0	0.0	
SE	9.0						1	9.0	.9
SSE	9.0						1	9.0	2.4
S		9.0					1	9.0	5.5
SSW			9.0				1	9.0	7.0
SW							0	C.C	
WSW	9.0	9.0					2	18.0	3.8
W		9.0					1	9.0	3.6
WNW							0	C.C	
NW	9.0	9.0					2	18.0	3.4
NNW							0	0.0	
CALM							C	C.C	
COL. TOTALS	45.0	45.0	9.0				11		3.6

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW SUMMARY		
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	8.3						1	8.3	1.6
NE	16.6						2	16.6	1.3
ENE							0	0.0	
E							0	0.0	
ESE	8.3						1	8.3	2.9
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW		8.3	8.3				2	16.6	7.6
WSW	8.3	8.3					2	16.6	3.2
W							0	0.0	
WNW			8.3				1	8.3	7.1
NW		8.3					1	8.3	4.5
NNW		16.6					2	16.6	4.8
CALM							0	0.0	
COL. TOTALS	41.5	41.5	16.6				12		4.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0						1	10.0	.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0	10.0					2	20.0	1.9
SSE							0	0.0	
S							0	0.0	
SSW	10.0		10.0				2	20.0	5.6
SW	10.0						1	10.0	2.4
WSW			10.0	10.0			2	20.0	10.0
W							0	0.0	
WNW	10.0						1	10.0	2.5
NW		10.0					1	10.0	5.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	20.0	20.0	10.0			10		4.6

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	8.3	8.3					2	16.6	2.2
ESE		8.3					1	8.3	4.7
SE							0	0.0	
SSE							0	0.0	
S	8.3						1	8.3	1.6
SSW							0	0.0	
SW			8.3				1	8.3	7.4
WSW		8.3	8.3				2	16.6	6.0
W							0	0.0	
WNW			8.3				1	8.3	6.8
NW		16.6					2	16.6	4.3
NNW		16.6					2	16.6	4.1
CALM							0	0.0	
COL. TOTALS	16.6	58.1	24.9				12		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		20.0					2	20.0	4.3
SSE		10.0					1	10.0	3.2
S							0	0.0	
SSW	10.0		10.0				2	20.0	4.8
SW							0	0.0	
WSW		20.0	10.0				3	30.0	6.3
W							0	0.0	
WNW							0	0.0	
NW		20.0					2	20.0	5.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	70.0	20.0				10		5.0

750 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	8.3						1	8.3	2.6
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE		8.3					1	8.3	3.5
SSE							0	0.0	
S			8.3				1	8.3	7.5
SSW		8.3					1	8.3	3.9
SW	8.3		8.3				2	16.6	4.9
WSW		8.3					1	8.3	4.4
W	8.3		8.3				2	16.6	4.6
WNW				8.3			1	8.3	10.0
NW							0	0.0	
NNW	8.3	8.3					2	16.6	4.0
CALM							0	0.0	
COL. TOTALS	33.2	33.2	24.9	8.3			12		4.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			11.1				1	11.1	6.1
S			11.1	11.1			2	22.2	9.7
SSW							0	0.0	
SW							0	0.0	
WSW				11.1	11.1		2	22.2	16.9
W	11.1		11.1				2	22.2	5.1
WNW			11.1				1	11.1	6.5
NW							0	0.0	
NNW		11.1					1	11.1	5.1
CALM							0	0.0	
COL. TOTALS	11.1	11.1	44.4	22.2	11.1		9		9.0

1000 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				8.3			1	8.3	14.3
SSW		8.3					1	8.3	5.4
SW							0	0.0	
WSW			25.0	8.3			4	33.3	8.7
W		8.3		8.3			2	16.6	8.7
WNW				8.3			1	8.3	12.6
NW		8.3					1	8.3	3.4
NNW		8.3	8.3				2	16.6	7.0
CALM							0	0.0	
COL. TOTALS		33.2	33.3	33.2			12		8.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			25.0				1	25.0	7.5
SSW							0	0.0	
SW							0	0.0	
WSW			25.0				1	25.0	8.1
W					25.0		1	25.0	21.5
WNW							0	0.0	
NW							0	0.0	
NNW		25.0					1	25.0	3.8
CALM							0	0.0	
COL. TOTALS		25.0	50.0		25.0		4		10.3

1500 METER LEVEL WINDS AFTERNOON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				10.0			1	10.0	11.5
WSW			20.0				2	20.0	8.0
W				30.0	10.0		4	40.0	12.9
WNW		10.0		10.0			2	20.0	9.6
NW			10.0				1	10.0	9.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		10.0	30.0	50.0	10.0		10		10.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW				50.0	50.0		2	100.0	15.6
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				50.0	50.0		2		15.6

2000 METER LEVEL WINDS AFTERNCON FEBRUARY,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW				25.0			1	25.0	11.3
WSW				25.0			1	25.0	14.4
W					25.0		1	25.0	16.8
WNW				25.0			1	25.0	11.3
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS				75.0	25.0		4		13.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	2.2
ENE							0	0.0	
E		9.0					1	9.0	3.4
ESE							0	0.0	
SE	18.1						2	18.1	1.1
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	18.1						2	18.1	1.5
WSW							0	0.0	
W	9.0						1	9.0	1.3
WNW	9.0						1	9.0	1.6
NW							0	0.0	
NNW							0	0.0	
CALM							3	27.0	
COL. TOTALS	63.2	9.0					11		1.2

SURFACE WINDS AFTERNCON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND *********						ROW	SUMMARY	
	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.3
ENE							0	0.0	
E							0	0.0	
ESE		9.0					1	9.0	4.0
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	1.6
SW	9.0						1	9.0	1.6
WSW	9.0						1	9.0	1.6
W		9.0	9.0				2	18.0	7.1
WNW	9.0						1	9.0	2.4
NW		9.0					1	9.0	3.3
NNW	9.0						1	9.0	1.3
CALM							1	9.0	
COL. TOTALS	54.0	27.0	9.0				11		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	1.0
ENE							0	0.0	
E	9.0						1	9.0	2.6
ESE	9.0						1	9.0	.6
SE	9.0						1	9.0	2.1
SSE	9.0						1	9.0	2.0
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW	27.2						3	27.2	1.5
W							0	0.0	
WNW	9.0						1	9.0	1.3
NW							0	0.0	
NNW	18.1						2	18.1	1.0
CALM							0	0.0	
COL. TOTALS	99.3						11		1.4

100 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	.4
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			9.0				1	9.0	8.1
SE							0	0.0	
SSE	9.0						1	9.0	.4
S	9.0						1	9.0	1.0
SSW							0	0.0	
SW							0	0.0	
WSW	18.1	9.0					3	27.1	2.8
W							0	0.0	
WNW		9.0					1	9.0	3.9
NW		18.1					2	18.1	4.3
NNW	9.0						1	9.0	2.8
CALM							0	0.0	
COL. TOTALS	54.1	36.1	9.0				11		3.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	.4
NNE	9.0						1	9.0	.4
NE	9.0	9.0					2	18.0	2.4
ENE	9.0						1	9.0	1.1
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	9.0	9.0					2	18.0	3.2
S							0	0.0	
SSW	9.0						1	9.0	1.0
SW	9.0	9.0					2	18.0	2.7
WSW	9.0						1	9.0	1.1
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	72.0	27.0					11		1.9

200 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	9.0						1	9.0	1.5
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		9.0					1	9.0	3.9
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	1.3
SSW	9.0						1	9.0	.7
SW	9.0						1	9.0	1.4
WSW	9.0		9.0				2	18.0	4.7
W	9.0	9.0					2	18.0	3.1
WNW							0	0.0	
NW							0	0.0	
NNW	9.0		9.0				2	18.0	5.1
CALM							0	0.0	
COL. TOTALS	63.0	18.0	18.0				11		3.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE		9.0					1	9.0	3.7
E	9.0						1	9.0	2.3
ESE	9.0						1	9.0	1.4
SE	9.0						1	9.0	1.4
SSE		9.0					1	9.0	5.3
S	9.0						1	9.0	2.3
SSW	18.1						2	18.1	1.1
SW		9.0					1	9.0	5.5
WSW	9.0						1	9.0	1.5
W							0	0.0	
WNW		9.0					1	9.0	4.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	63.1	36.0					11		2.7

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	9.0						1	9.0	1.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW	9.0						1	9.0	2.7
SW	9.0						1	9.0	1.1
WSW		9.0					1	9.0	3.0
W		9.0					1	9.0	5.9
WNW	9.0						1	9.0	2.4
NW	18.1						2	18.1	1.8
NNW	18.1					9.0	3	27.1	10.6
CALM							0	0.0	
COL. TOTALS	72.2	18.0				9.0	11		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	9.0						1	9.0	.9
ENE	9.0						1	9.0	2.5
E							0	0.0	
ESE	9.0						1	9.0	1.1
SE	9.0						1	9.0	2.4
SSE	9.0		9.0				2	18.0	4.0
S	9.0						1	9.0	1.9
SSW							0	0.0	
SW	18.1						2	18.1	2.8
WSW	9.0						1	9.0	1.9
W			9.0				1	9.0	8.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	81.1		18.0				11		2.9

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	27.2						3	27.2	1.2
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		9.0			9.0		2	18.0	11.8
SE							0	0.0	
SSE							0	0.0	
S	9.0						1	9.0	[illegible]
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		18.1	9.0				3	27.1	5.2
WNW							0	0.0	
NW							0	0.0	
NNW	18.1						2	18.1	1.5
CALM							0	0.0	
COL. TOTALS	54.3	27.1	9.0		9.0		11		4.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 RIVOL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E		9.0					1	9.0	3.8
ESE							0	0.0	
SE		9.0					1	9.0	4.3
SSE		9.0					1	9.0	3.8
S	9.0		9.0				2	18.0	3.6
SSW			9.0				1	9.0	6.5
SW	9.0						1	9.0	2.9
WSW			9.0				1	9.0	9.8
W			9.0				1	9.0	7.3
WNW		9.0					1	9.0	4.4
NW	9.0						1	9.0	1.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	27.0	36.0	36.0				11		4.7

750 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE		9.0					1	9.0	5.6
ENE							0	0.0	
E	9.0		9.0				2	18.0	5.0
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	9.0	9.0					2	18.0	3.3
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W		18.1	9.0				3	27.1	6.3
WNW							0	0.0	
NW							0	0.0	
NNW	9.0	18.1					3	27.1	2.5
CALM							0	0.0	
COL. TOTALS	27.0	54.2	18.0				11		4.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 RIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE		9.0					1	9.0	5.6
SE							0	0.0	
SSE		9.0					1	9.0	3.5
S							0	0.0	
SSW		9.0	9.0				2	18.0	5.7
SW		9.0					1	9.0	4.3
WSW							0	0.0	
W				9.0			1	9.0	10.8
WNW		9.0	9.0	9.0			3	27.0	6.7
NW		9.0					1	9.0	5.5
NNW							0	0.0	
CALM	9.0						1	9.0	2.4
COL. TOTALS	9.0	54.0	18.0	18.0			11		5.7

1000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E			9.0				1	9.0	7.7
ESE							0	0.0	
SE	9.0						1	9.0	1.3
SSE		9.0					1	9.0	4.0
S		9.0					1	9.0	5.3
SSW							0	0.0	
SW							0	0.0	
WSW			9.0				1	9.0	8.6
W			9.0	9.0			2	18.0	11.6
WNW		18.1					2	18.1	4.7
NW		9.0	9.0				2	18.0	6.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	45.1	36.0	9.0			11		6.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E	10.0			10.0			2	20.0	6.4
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S				10.0			1	10.0	11.7
SSW							0	0.0	
SW		10.0	10.0				2	20.0	7.0
WSW							0	0.0	
W	10.0				20.0		3	30.0	16.1
WNW			10.0				1	10.0	9.0
NW			10.0				1	10.0	6.9
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	10.0	30.0	20.0	20.0		10		10.2

1500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				10.0			1	10.0	11.0
ESE	10.0						1	10.0	2.8
SE							0	0.0	
SSE							0	0.0	
S			10.0				1	10.0	9.4
SSW							0	0.0	
SW		10.0					1	10.0	4.2
WSW					10.0		1	10.0	17.2
W			20.0	10.0			3	30.0	8.3
WNW			10.0	10.0			2	20.0	10.5
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	10.0	40.0	30.0	10.0		10		9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	14.2						1	14.2	2.7
E	14.2						1	14.2	.5
ESE			14.2				1	14.2	7.5
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			14.2				1	14.2	7.8
SW							0	0.0	
WSW			14.2				1	14.2	6.0
W							0	0.0	
WNW			14.2				1	14.2	7.4
NW			14.2				1	14.2	8.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	28.4		71.0				7		5.7

2000 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	WIND SPEEDS METERS/SECOND 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E				20.0			1	20.0	12.9
ESE							0	0.0	
SE	20.0						1	20.0	2.7
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		20.0					1	20.0	4.3
W		20.0					1	20.0	3.6
WNW	20.0						1	20.0	2.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	40.0		20.0			5		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

SURFACE WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	50.0						2	50.0	1.0
SSW							0	0.0	
SW	25.0						1	25.0	.8
WSW							0	0.0	
W	25.0						1	25.0	1.6
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						4		1.1

SURFACE WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0					1	25.0	4.7
SW	25.0						1	25.0	1.1
WSW							0	0.0	
W	25.0	25.0					2	50.0	2.7
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					4		2.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

100 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S	25.0						1	25.0	.8
SSW							0	0.0	
SW	25.0						1	25.0	.4
WSW							0	0.0	
W	25.0						1	25.0	.4
WNW	25.0						1	25.0	.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	100.0						4		.5

100 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW SUMMARY TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	25.0						1	25.0	.3
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		25.0					1	25.0	5.7
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW				25.0			1	25.0	11.8
NW	25.0						1	25.0	1.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0		25.0			4		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 RIVCL & CONTINUOUS MAPS

200 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE	25.0						1	25.0	.9
E							0	0.0	
ESE							0	0.0	
SE	25.0						1	25.0	1.8
SSE							0	0.0	
S							0	0.0	
SSW	25.0						1	25.0	.4
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW	25.0						1	25.0	1.9
CALM							0	0.0	
COL. TOTALS	100.0						4		1.2

200 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	50.0						2	50.0	.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW		25.0					1	25.0	5.7
SW							0	0.0	
WSW							0	0.0	
W				25.0			1	25.0	14.8
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0		25.0			4		5.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 RIVCL & CONTINUOUS MAPS

300 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	25.0						1	25.0	1.3
NE							0	0.0	
ENE							0	0.0	
E	25.0						1	25.0	.9
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW	25.0						1	25.0	.7
WSW		25.0					1	25.0	3.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	75.0	25.0					4		1.5

300 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	25.0						1	25.0	1.2
NNE	25.0						1	25.0	.5
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		25.0					1	25.0	5.0
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W				25.0			1	25.0	11.5
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	25.0		25.0			4		4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 MIVCL & CONTINUOUS MAPS

500 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	C.C	
NNE							0	C.C	
NE							0	C.C	
ENE	25.0						1	25.0	1.4
E							0	C.C	
ESE							0	0.0	
SE							0	C.C	
SSE							C	C.C	
S	25.0						1	25.0	1.1
SSW							0	C.0	
SW							0	C.C	
WSW		25.0					1	25.0	5.7
W							0	C.0	
WNW							C	C.C	
NW							0	0.0	
NNW	25.0						1	25.0	.3
CALM							C	C.C	
COL. TOTALS	75.0	25.0					4		2.1

500 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	33.3						1	33.3	1.9
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			33.3				1	33.3	7.1
SSW							0	C.C	
SW							0	0.0	
WSW							0	0.0	
W							0	C.C	
WNW							C	C.C	
NW							0	0.0	
NNW	33.3						1	33.3	.9
CALM							C	C.C	
COL. TOTALS	66.6		33.3				3		3.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 MIVCL & CONTINUOUS MAPS

750 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							C	C.C	
NNE							0	0.0	
NE							C	C.C	
ENE							C	C.C	
E							0	0.0	
ESE		25.0					1	25.0	3.2
SE							C	C.C	
SSE							0	0.0	
S	25.0	25.0					2	50.0	3.9
SSW							C	C.C	
SW							0	C.C	
WSW							0	C.C	
W			25.0				1	25.0	9.6
WNW							C	0.0	
NW							0	0.0	
NNW							C	C.C	
CALM							0	C.C	
COL. TOTALS	25.0	50.0	25.0				4		5.1

750 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	C.C	
NNE							0	0.0	
NE							0	0.0	
ENE							C	C.C	
E							0	0.0	
ESE							C	0.0	
SE							0	C.C	
SSE							0	0.0	
S							0	0.0	
SSW			33.3				1	33.3	7.4
SW							0	0.0	
WSW							0	0.0	
W	33.3						1	33.3	1.7
WNW							0	0.0	
NW							0	C.0	
NNW			33.3				1	33.3	6.3
CALM							0	0.0	
COL. TOTALS	33.3		66.6				3		5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1000 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	25.0						1	25.0	2.4
SSE							0	0.0	
S		25.0					1	25.0	5.3
SSW		25.0					1	25.0	5.7
SW							0	0.0	
WSW							0	0.0	
W				25.0			1	25.0	15.1
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	50.0		25.0			4		7.1

1000 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW			50.0				1	50.0	7.2
SW							0	0.0	
WSW							0	0.0	
W	50.0						1	50.0	2.0
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0		50.0				2		4.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CO - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

1500 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			33.3				1	33.3	6.2
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW		33.3					1	33.3	4.9
W							0	0.0	
WNW							0	0.0	
NW	33.3						1	33.3	1.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	33.3	33.3				3		4.0

1500 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********* WIND SPEEDS METERS/SECOND ********* 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW	50.0	50.0					2	100.0	2.9
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		2.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: MISSOULA CC - LIONS PARK #1 HIVOL & CONTINUOUS MAPS

2000 METER LEVEL WINDS MORNING APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	33.3						1	33.3	1.2
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S		33.3					1	33.3	5.5
SSW							0	0.0	
SW							0	0.0	
WSW		33.3					1	33.3	4.4
W							0	0.0	
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	66.6					3		3.7

2000 METER LEVEL WINDS AFTERNOON APRIL,1979

DIRECTION	********** WIND SPEEDS METERS/SECOND ********** 00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NW	50.0	50.0					2	100.0	3.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	50.0					2		3.8

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF DECEMBER 1977

******* FIRST INVERSION FREQUENCY OF OCCURRENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0001-0600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	16	0	2	0	0	1	0	0	0	0	19
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											2
TOTAL	26	0	2	0	0	1	0	0	0	0	31
---TIME 0601-1200 MST											
001-100	0	0	1	1	0	0	0	0	0	0	2
101-300	15	0	1	0	1	0	0	0	0	0	17
301-500	6	0	1	0	0	0	0	0	0	0	7
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											2
TOTAL	24	0	3	1	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	1	1	1	0	0	0	0	0	0	3
101-300	13	0	1	0	0	0	0	0	0	0	14
301-500	6	1	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											5
TOTAL	21	2	2	1	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	1	0	0	1	0	0	0	0	0	0	2
101-300	20	0	0	0	0	0	0	0	0	0	20
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											0
TOTAL	30	0	0	1	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	1	1	2	3	0	0	0	0	0	0	7
101-300	64	0	4	0	1	1	0	0	0	0	70
301-500	32	1	1	0	0	0	0	0	0	0	34
501-900	4	0	0	0	0	0	0	0	0	0	4
NO INVERSION											9
TOTAL	101	2	7	3	1	1	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF DECEMBER 1977

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	1	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	1	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
FREQUENCY SUMMARY FOR SECOND INVERSION											
001-100	0	0	0	0	0	1	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											123
TOTAL	0	0	0	0	0	1	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF DECEMBER 1977

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	D	D	D	C	C	E	D	D	D
2	D	C	E	C	D	E	E	C	D	C	D	D
3	E	D	E	D	E	E	C	C	E	D	E	E
4	E	E	E	D	C	D	C	E	E	E	E	E
5	E	E	E	E	E	D	D	D	E	E	E	E
6	D	C	C	D	C	D	E	E	D	D	D	D
7	E	E	E	E	D	E	E	E	E	E	E	E
8	E	F	F	E	E	D	D	C	E	D	E	D
9	E	E	C	C	E	D	D	D	D	C	C	D
10	D	D	D	D	D	D	D	D	E	E	E	E
11	E	E	E	E	E	E	E	E	D	E	E	E
12	D	D	D	E	E	E	E	E	E	E	E	E
13	E	E	E	D	D	D	D	D	D	D	E	D
14	D	D	D	E	E	E	D	E	D	D	E	E
15	E	E	E	E	D	D	E	E	E	E	E	E
16	E	E	E	E	D	D	D	D	D	F	F	F
17	E	F	F	E	E	E	E	E	E	E	E	E
18	E	D	D	D	D	D	E	E	E	F	E	E
19	E	E	E	E	E	E	E	E	E	E	F	F
20	F	F	F	F	F	F	E	F	F	E	E	E
21	E	F	F	E	E	E	E	E	E	E	E	E
22	D	D	D	D	D	D	E	E	E	E	E	D
23	D	E	E	E	E	E	E	D	D	E	E	E
24	E	E	E	F	F	F	E	F	F	E	E	D
25	E	E	E	E	D	D	D	E	E	E	E	E
26	E	E	E	D	D	D	E	F	F	F	F	F
27	E	E	E	E	D	D	D	D	E	E	E	E
28	E	E	E	E	E	D	D	D	D	E	E	E
29	E	E	E	E	E	E	E	E	E	D	D	D
30	D	D	D	D	E	E	E	D	E	E	E	E
31	E	E	E	E	E	D	D	D	F	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 0.0 % D=34.4 % E=56.5 % F= 9.1 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JANUARY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	1	0	0	0	0	1
101-300	15	0	1	1	0	0	0	0	0	0	17
301-500	10	0	0	0	0	0	0	0	0	0	10
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											1
TOTAL	26	0	1	1	0	1	0	0	0	0	30
---TIME 601-1200 MST											
001-100	1	1	2	1	1	0	0	0	0	0	6
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	23	1	2	1	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	11	1	2	0	0	0	0	0	0	0	14
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	18	1	3	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	12	0	0	0	1	0	0	0	0	0	13
301-500	11	0	1	0	0	0	0	0	0	0	12
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											3
TOTAL	26	0	1	0	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	2	1	3	1	1	1	0	0	0	0	9
101-300	48	1	3	1	1	0	0	0	0	0	54
301-500	40	0	1	0	0	0	0	0	0	0	41
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											16
TOTAL	93	2	7	2	2	1	0	0	0	0	123

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JANUARY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	1	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	1	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	1	1	1	0	0	0	0	3
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	1	1	1	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	1	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	1	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	1	1	0	0	0	0	3
101-300	0	0	0	1	0	0	1	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											118
TOTAL	0	0	0	2	1	1	1	0	0	0	123

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JANUARY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	F	F	F	F	F	F	F	F	F	F	F	F
2	F	F	F	F	F	F	F	F	F	E	E	E
3	D	D	D	D	D	D	D	D	E	D	D	D
4	D	D	D	D	E	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	D	D	E	E	E
6	E	E	E	E	D	D	C	C	D	D	D	D
7	E	E	E	E	E	D	D	D	E	E	E	E
8	D	D	D	D	D	D	D	C	D	D	D	D
9	M	M	M	M	M	E	E	E	E	E	E	E
10	E	E	E	E	E	E	D	D	E	E	E	E
11	E	D	D	D	D	D	D	D	D	D	E	E
12	E	E	E	E	E	E	E	E	E	E	E	E
13	E	E	E	E	E	E	E	E	E	E	E	D
14	D	E	D	D	D	D	D	D	E	E	E	E
15	E	E	E	E	E	D	D	D	D	E	E	E
16	E	E	E	E	E	E	E	E	E	D	D	D
17	D	D	D	D	E	E	E	E	E	D	D	D
18	D	E	E	E	D	D	D	D	E	E	E	E
19	E	E	E	E	E	E	E	D	D	D	D	D
20	D	D	D	D	D	D	D	D	E	E	E	E
21	E	E	E	E	E	E	E	E	E	E	E	D
22	E	E	E	E	D	D	D	D	E	E	E	E
23	E	E	E	E	E	D	C	C	E	E	F	F
24	E	E	E	E	E	E	E	E	E	E	E	E
25	E	E	E	D	D	D	D	D	E	E	E	D
26	D	D	D	D	D	D	D	E	E	E	E	E
27	E	E	E	E	E	D	D	D	E	E	F	F
28	F	E	D	D	D	D	D	E	E	D	D	D
29	E	E	E	E	D	D	D	E	E	E	E	E
30	E	E	E	E	F	F	E	E	E	E	E	E
31	E	E	E	E	E	E	E	D	E	E	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 1.1 % D=33.6 % E=56.5 % F= 7.5 %

U= 0.0 % M= 1.3 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOUL.
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF FEBUARY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	4	0	0	0	0	0	0	0	0	0	4
301-500	15	1	0	0	0	0	0	0	0	0	16
501-900	5	0	0	0	0	0	0	0	0	0	5
NO INVERSION											2
TOTAL	25	1	0	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	12	1	0	0	0	0	0	0	0	0	13
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											1
TOTAL	26	1	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											9
TOTAL	18	0	0	0	0	0	0	0	0	0	27
---TIME 1801-2400 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	8	0	1	0	0	0	0	0	0	0	9
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											6
TOTAL	19	0	1	1	0	0	0	0	0	0	27
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	1	0	0	1	0	0	0	0	0	0	2
101-300	36	1	0	0	0	0	0	0	0	0	37
301-500	42	1	1	0	0	0	0	0	0	0	44
501-900	9	0	0	0	0	0	0	0	0	0	9
NO INVERSION											18
TOTAL	88	2	1	1	0	0	0	0	0	0	110

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF FEBUARY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	0	0	0	0	0	0	27
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	0	0	0	0	0	0	27
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											110
TOTAL	0	0	0	0	0	0	0	0	0	0	110

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF FEBUARY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	E	E	E	E	E	D	D	D	D
2	D	D	E	D	E	D	E	D	E	E	E	E
3	D	E	E	E	E	E	M	M	M	M	M	M
4	E	F	F	E	E	E	E	E	E	E	E	E
5	E	E	E	E	E	E	E	E	E	E	M	M
6	M	M	D	D	E	E	E	E	E	F	F	F
7	E	E	E	E	F	F	E	E	E	D	E	E
8	E	E	E	E	D	C	C	B	D	F	F	F
9	E	E	E	E	E	E	D	D	D	D	D	D
10	D	D	E	E	E	E	E	E	E	E	D	D
11	D	D	D	D	D	D	D	D	D	D	D	D
12	D	E	E	E	E	D	D	D	E	E	E	E
13	E	E	E	F	E	E	F	E	E	F	F	F
14	F	F	F	E	E	E	E	E	E	E	E	E
15	E	E	E	E	D	E	E	E	E	E	E	E
16	E	E	E	E	E	D	D	D	E	E	E	E
17	E	E	E	E	F	F	D	D	D	E	E	E
18	E	E	E	D	D	D	E	E	E	E	E	E
19	E	E	E	E	E	E	E	E	E	D	D	D
20	E	E	E	E	E	D	B	C	D	F	F	F
21	E	E	E	E	E	E	E	E	E	E	F	F
22	E	E	E	E	F	F	E	E	E	E	E	E
23	E	E	E	E	E	E	E	D	D	D	D	D
24	D	E	D	E	E	D	D	D	E	E	E	E
25	E	E	E	E	E	E	E	E	D	D	D	D
26	E	D	E	D	D	E	D	D	E	E	E	E
27	E	E	E	E	D	D	C	D	E	D	E	E
28	E	E	E	E	E	E	E	E	E	D	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.6 % C= 1.2 % D=23.8 % E=63.4 % F= 8.0 %

U= 0.0 % M= 3.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF MARCH 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	9	1	0	0	0	0	0	0	0	0	10
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	6	0	0	0	0	0	0	0	0	0	6
NO INVERSION											3
TOTAL	26	1	1	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	1	0	1	0	0	0	0	0	2
101-300	7	3	3	0	0	0	0	0	0	0	13
301-500	5	1	1	0	0	0	0	0	0	0	7
501-900	1	1	0	0	0	0	0	0	0	0	2
NO INVERSION											7
TOTAL	13	5	5	0	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	2	0	0	0	0	0	0	0	0	0	2
301-500	2	1	1	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											24
TOTAL	4	1	2	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	22	0	0	0	0	0	0	0	0	0	22
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											5
TOTAL	26	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	0	0	3	0	1	0	0	0	0	0	4
101-300	40	4	3	0	0	0	0	0	0	0	47
301-500	19	2	2	0	0	0	0	0	0	0	23
501-900	10	1	0	0	0	0	0	0	0	0	11
NO INVERSION											39
TOTAL	69	7	8	0	1	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF MARCH 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											124
TOTAL	0	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF MARCH 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	D	C	C	C	E	E	F	E	D
2	D	D	D	D	C	C	C	C	D	D	D	D
3	D	C	D	D	D	C	C	C	D	D	D	E
4	E	E	E	D	C	C	C	C	E	E	E	E
5	D	D	D	E	E	E	E	E	E	E	E	E
6	D	D	E	E	E	E	E	D	D	E	E	E
7	F	E	E	E	E	E	E	E	E	E	E	D
8	D	D	D	E	E	E	D	D	D	E	D	E
9	D	D	D	D	D	D	D	D	E	E	F	F
10	F	E	E	E	D	C	C	C	D	E	F	F
11	F	F	F	E	C	D	C	D	D	E	E	E
12	E	E	E	E	D	C	C	D	D	D	E	E
13	E	E	E	E	D	C	C	D	D	D	E	E
14	D	E	E	E	E	D	C	C	E	D	E	E
15	F	F	F	E	C	D	C	C	D	E	F	F
16	E	E	E	E	B	D	C	C	D	E	F	F
17	F	F	F	E	E	E	E	D	D	E	E	E
18	E	E	E	E	D	C	D	D	D	D	F	F
19	F	F	F	E	C	C	D	D	D	E	F	F
20	F	F	F	E	C	D	C	C	D	F	F	F
21	F	F	F	E	C	C	D	C	D	E	E	E
22	E	E	E	E	D	C	C	C	D	E	E	E
23	E	E	E	E	D	C	B	C	D	D	D	D
24	D	E	E	E	D	C	C	C	C	D	F	F
25	E	E	E	E	C	C	D	D	D	E	F	F
26	E	F	F	E	C	C	D	C	D	E	F	F
27	E	F	F	E	C	D	C	C	D	D	D	D
28	E	E	E	E	C	D	C	C	C	E	F	F
29	F	F	F	B	B	B	D	C	C	E	E	E
30	E	E	E	C	C	D	C	D	D	D	E	E
31	D	D	D	C	C	C	C	C	D	D	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.3 % C=18.8 % D=29.6 % E=36.6 % F=13.7 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF APRIL 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	1	0	0	0	0	0	0	0	0	1
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	10	0	0	0	0	0	0	0	0	0	10
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											5
TOTAL	21	1	0	0	0	0	0	0	0	0	27
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	3	3	1	0	0	0	0	0	0	7
301-500	0	1	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											20
TOTAL	0	4	3	1	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											11
TOTAL	15	0	0	0	0	0	0	0	0	0	26
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	23	3	3	1	0	0	0	0	0	0	30
301-500	11	1	0	0	0	0	0	0	0	0	12
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											64
TOTAL	36	5	3	1	0	0	0	0	0	0	109

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF APRIL 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	0	0	0	0	0	0	27
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											26
TOTAL	0	0	0	0	0	0	0	0	0	0	26
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											109
TOTAL	0	0	0	0	0	0	0	0	0	0	109

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF APRIL 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	C	C	C	C	D	E	E	E
2	D	D	D	D	C	D	C	C	D	F	E	E
3	F	E	E	E	D	C	C	C	C	D	E	E
4	E	F	F	E	C	D	C	C	D	D	D	D
5	D	D	F	D	C	C	C	C	D	E	E	E
6	E	E	E	D	C	C	C	C	D	D	D	D
7	D	D	D	D	C	C	B	C	D	D	D	E
8	E	E	E	D	C	C	C	D	D	D	D	D
9	E	F	F	E	D	C	C	C	D	F	F	F
10	F	F	F	F	D	C	C	C	M	M	M	M
11	M	M	M	M	M	C	C	C	D	D	D	D
12	E	E	E	D	C	C	C	C	C	F	F	F
13	F	F	F	F	B	D	C	C	D	E	E	D
14	D	D	D	D	C	C	C	D	D	E	E	E
15	E	E	E	E	C	C	C	C	D	D	E	E
16	E	E	E	E	E	C	C	D	D	D	D	D
17	E	E	E	E	C	C	C	C	D	E	E	E
18	E	E	E	F	C	D	C	C	C	E	E	E
19	E	E	E	E	D	C	C	C	D	D	D	D
20	D	E	E	E	D	C	D	D	D	D	D	D
21	E	D	D	D	D	C	C	C	C	D	E	E
22	E	E	E	D	C	C	C	C	C	D	D	D
23	E	E	E	D	C	C	C	B	B	D	F	F
24	F	F	F	E	C	D	C	B	D	D	E	E
25	E	E	E	E	D	C	C	C	D	D	D	D
26	E	E	E	E	C	C	D	D	D	D	D	E
27	E	F	F	E	D	D	C	C	D	E	E	E
28	E	E	D	D	C	C	C	C	M	M	M	M
29	M	M	M	M	M	M	M	M	M	M	M	M
30	M	M	M	M	M	M	M	M	M	M	M	M

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 1.4 % C=25.0 % D=30.0 % E=25.3 % F= 8.1 %

U= 0.0 % M=10.3 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF MAY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	1	0	0	0	0	0	0	0	2
101-300	10	0	0	0	0	0	0	0	0	0	10
301-500	13	0	0	0	0	0	0	0	0	0	13
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											4
TOTAL	25	0	1	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	2	0	0	1	1	0	0	0	0	0	4
101-300	3	0	2	0	0	0	0	0	0	0	5
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											20
TOTAL	7	0	2	1	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	1	0	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	1	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	4	0	0	0	0	0	0	0	0	0	4
101-300	21	0	0	0	0	0	0	0	0	0	21
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	25	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	7	0	1	1	1	0	0	0	0	0	10
101-300	35	0	2	0	0	0	0	0	0	0	37
301-500	15	0	0	0	0	0	0	0	0	0	15
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											60
TOTAL	58	0	3	1	1	0	0	0	0	0	123

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF MAY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	1	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											122
TOTAL	0	0	0	0	1	0	0	0	0	0	123

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF MAY 1978

********* TWO HOUR STABILITY ANALYSIS **************************

	HOUR											
DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	D	C	C	C	C	D	E	E	E
2	E	E	E	D	C	D	D	D	D	D	E	E
3	E	E	E	D	C	C	C	C	E	E	E	E
4	E	E	E	E	D	C	C	C	C	D	E	E
5	E	E	D	D	D	C	C	C	D	D	D	D
6	E	E	E	D	C	C	C	C	D	D	F	F
7	F	F	F	F	B	D	D	D	D	D	F	F
8	E	E	E	E	B	B	C	D	D	D	F	F
9	E	E	E	E	E	D	C	C	D	D	E	D
10	D	D	D	D	C	C	C	C	D	D	E	E
11	E	E	D	D	C	C	D	D	C	D	F	F
12	E	E	E	E	D	C	C	C	D	D	D	E
13	E	E	E	E	D	C	C	C	D	D	E	E
14	E	E	E	E	E	D	C	C	E	E	E	E
15	E	E	E	D	D	D	D	D	D	D	E	E
16	E	E	E	D	C	C	C	C	C	D	E	E
17	E	E	E	D	C	C	D	D	D	E	E	E
18	E	E	E	E	D	D	D	D	D	E	E	E
19	E	D	D	D	C	C	C	C	D	D	F	F
20	F	F	F	F	D	A	C	C	C	D	E	E
21	E	F	F	D	B	B	B	B	D	E	D	E
22	D	D	D	C	D	C	C	C	D	D	E	E
23	E	E	E	D	D	D	D	D	D	D	D	E
24	D	D	D	E	D	C	C	C	C	D	E	E
25	E	D	E	D	C	D	D	C	D	E	F	F
26	F	F	F	D	C	C	C	C	D	D	F	F
27	E	E	E	E	C	D	C	C	D	D	E	E
28	E	E	E	D	C	B	C	C	C	D	F	F
29	F	E	E	D	D	C	C	C	D	M	D	D
30	D	D	D	D	D	D	D	D	D	D	D	D
31	D	D	E	D	D	C	C	C	C	D	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.3 % B= 2.2 % C=21.0 % D=36.6 % E=30.9 % F= 8.1 %

U= 0.0 % M= 1.1 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JUNE 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	5	0	0	0	0	0	0	0	0	0	5
NO INVERSION											3
TOTAL	26	0	0	0	0	0	0	0	0	0	29
---TIME 601-1200 MST											
001-100	0	0	4	3	2	0	0	0	0	0	9
101-300	0	1	1	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											19
TOTAL	0	1	5	3	2	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	6	0	0	0	0	0	0	0	0	0	6
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											8
TOTAL	22	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	7	0	4	3	2	0	0	0	0	0	16
101-300	27	1	1	0	0	0	0	0	0	0	29
301-500	9	0	0	0	0	0	0	0	0	0	9
501-900	5	0	0	0	0	0	0	0	0	0	5
NO INVERSION											60
TOTAL	48	1	5	3	2	0	0	0	0	0	119

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JUNE 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	0	0	0	0	29
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											119
TOTAL	0	0	0	0	0	0	0	0	0	0	119

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JUNE 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	C	C	C	C	C	D	F	F
2	F	F	F	E	E	A	C	C	C	E	E	E
3	F	E	E	C	D	C	C	C	D	D	F	F
4	F	F	F	D	B	A	A	C	D	D	F	F
5	F	F	F	C	D	B	C	C	D	E	F	F
6	E	E	E	B	D	C	C	C	D	E	E	E
7	E	E	E	C	D	A	C	C	C	E	F	F
8	F	E	E	B	D	A	C	C	D	D	F	F
9	F	E	E	F	D	D	D	C	C	D	E	E
10	E	E	D	D	C	C	D	B	D	D	E	E
11	D	E	E	D	C	B	B	C	D	D	F	F
12	F	F	F	C	C	D	C	D	D	D	D	D
13	D	D	D	C	C	C	C	D	D	D	D	F
14	E	E	E	D	C	E	C	D	C	D	D	D
15	D	F	F	D	C	C	C	C	C	D	E	E
16	E	E	E	C	D	C	B	D	D	D	E	E
17	E	D	D	D	C	B	C	C	C	D	F	F
18	F	F	F	E	D	B	D	D	D	D	E	E
19	E	E	E	D	C	C	C	C	C	D	F	F
20	F	F	F	B	D	A	A	C	C	D	F	F
21	F	F	F	B	D	A	C	C	D	D	D	D
22	E	E	E	D	C	C	B	C	D	D	E	E
23	F	F	F	D	C	A	D	C	D	D	D	E
24	D	E	E	C	D	B	C	M	D	D	D	D
25	D	D	D	D	D	D	D	D	D	D	D	D
26	D	D	D	C	C	B	C	C	C	D	F	F
27	F	F	F	D	E	A	C	C	C	E	F	F
28	F	F	F	B	C	D	C	C	D	F	F	F
29	F	F	F	D	E	A	C	C	D	E	E	E
30	F	F	F	F	C	C	D	D	D	D	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 3.1 % B= 5.8 % C=23.1 % D=30.8 % E=15.6 % F=20.3 %

U= 0.0 % M= 1.4 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JULY 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	17	0	0	0	0	0	0	0	0	0	17
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	26	0	0	0	0	0	0	0	0	0	29
---TIME 601-1200 MST											
001-100	0	0	3	1	0	1	0	0	0	0	5
101-300	0	0	2	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											22
TOTAL	0	0	5	1	0	1	0	0	0	0	29
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	26	0	0	0	0	0	0	0	0	0	26
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											0
TOTAL	29	0	0	0	0	0	0	0	0	0	29
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	1	0	3	1	0	1	0	0	0	0	6
101-300	35	0	2	0	0	0	0	0	0	0	37
301-500	19	0	0	0	0	0	0	0	0	0	19
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											55
TOTAL	55	0	5	1	0	1	0	0	0	0	117

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JULY 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	0	0	0	0	29
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	0	0	0	0	29
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	0	0	0	0	29
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											117
TOTAL	0	0	0	0	0	0	0	0	0	0	117

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF JULY 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	C	D	C	C	D	E	E	D
2	F	F	F	F	D	E	E	C	C	D	E	E
3	F	E	E	D	C	D	D	D	D	D	E	E
4	E	E	D	D	C	C	C	C	E	E	D	D
5	D	D	D	D	D	C	D	B	B	D	E	E
6	F	E	D	C	C	A	C	C	C	D	E	E
7	E	F	F	C	D	C	D	D	E	E	E	E
8	F	E	E	D	C	D	D	C	D	D	E	E
9	D	D	D	C	C	A	C	C	C	D	E	D
10	E	E	E	E	D	C	C	C	C	D	F	F
11	F	F	F	C	D	C	C	C	C	D	F	F
12	F	F	F	F	D	A	C	C	C	E	F	F
13	F	F	F	B	D	A	B	C	C	D	F	F
14	F	F	F	C	C	D	C	B	B	D	F	F
15	F	F	F	D	B	A	B	D	D	E	E	E
16	F	D	E	D	C	C	C	C	C	D	E	E
17	E	E	E	D	D	C	C	C	C	D	F	F
18	F	F	F	E	C	D	C	C	D	D	E	E
19	F	F	F	D	C	A	C	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	C	C	D	F	F
22	F	F	F	D	E	A	B	C	C	D	F	F
23	F	F	F	B	D	B	C	C	D	D	F	F
24	F	F	F	B	D	A	C	C	D	D	E	E
25	F	F	F	B	C	D	C	C	C	D	F	F
26	F	F	F	C	D	A	C	C	C	D	E	E
27	D	D	E	C	D	C	C	C	C	D	F	F
28	F	F	F	C	D	C	C	C	C	E	F	F
29	F	F	F	C	D	A	C	C	C	D	F	F
30	F	F	F	C	D	A	C	C	C	D	F	F
31	F	E	E	F	D	A	C	C	C	D	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 3.2 % B= 4.3 % C=25.0 % D=23.4 % E=14.0 % F=23.7 %

U= 0.0 % M= 6.5 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOU
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF AUGUST 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	7	0	0	0	0	0	0	0	0	0	7
301-500	14	0	0	0	0	0	0	0	0	0	14
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											4
TOTAL	25	0	0	0	0	0	0	0	0	0	29
---TIME 601-1200 MST											
001-100	0	0	3	1	0	0	0	0	0	0	4
101-300	0	0	7	3	1	0	0	0	0	0	11
301-500	0	0	1	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											13
TOTAL	0	0	11	4	1	0	0	0	0	0	29
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	22	0	0	1	0	0	0	0	0	0	23
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	25	0	0	1	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	3	0	3	1	0	0	0	0	0	0	7
101-300	29	0	7	4	1	0	0	0	0	0	41
301-500	15	0	1	0	0	0	0	0	0	0	16
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											51
TOTAL	50	0	11	5	1	0	0	0	0	0	118

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF AUGUST 1978

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	1	0	0	0	0	0	0	0	29
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	0	0	0	0	0	29
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											117
TOTAL	0	0	1	0	0	0	0	0	0	0	118

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF AUGUST 1978

********* TWO HOUR STABILITY ANALYSIS *********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	F	F	F	F	D	A	C	C	D	F	E	E
2	D	D	D	C	C	C	C	C	C	E	F	F
3	F	F	F	B	D	C	C	C	C	E	F	F
4	F	F	F	B	E	B	C	C	D	F	F	F
5	E	E	E	F	D	C	C	C	C	F	F	F
6	F	F	F	F	D	C	C	C	C	E	F	F
7	F	F	F	D	E	B	C	C	C	D	F	F
8	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	C	C	C	D	E	E
10	F	F	F	E	D	C	C	C	C	F	F	F
11	F	F	F	E	D	B	C	C	C	D	E	E
12	E	F	F	D	C	C	C	C	D	D	D	D
13	D	D	D	D	C	C	C	C	C	E	E	E
14	E	D	D	D	C	C	C	C	D	D	E	E
15	E	E	E	E	D	C	C	E	D	D	D	D
16	E	E	E	D	D	C	D	D	C	D	F	F
17	E	E	D	D	D	D	D	D	D	D	D	E
18	D	D	D	D	C	C	C	C	C	D	E	E
19	E	E	E	E	C	D	C	C	D	E	E	E
20	E	E	E	D	C	C	C	C	D	E	E	E
21	E	F	F	E	D	B	C	C	E	E	E	E
22	E	E	E	D	D	D	D	D	D	D	D	D
23	E	E	E	E	D	B	C	C	D	E	F	F
24	E	F	F	E	D	C	C	C	D	E	F	F
25	F	E	E	F	D	C	C	C	C	D	D	E
26	E	E	E	E	D	C	C	C	C	D	E	E
27	E	E	E	F	D	C	C	C	C	D	F	F
28	F	F	F	F	D	C	C	C	C	D	F	F
29	F	F	F	E	D	C	C	C	C	E	F	F
30	F	F	F	E	D	C	C	C	D	E	F	F
31	D	D	E	E	D	C	C	C	C	D	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.7 % B= 2.2 % C=26.3 % D=23.4 % E=22.8 % F=20.2 %

U= 0.0 % M= 4.8 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF SEPT. 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	2	0	1	0	0	0	0	0	0	0	3
101-300	7	0	0	0	0	0	0	0	0	0	7
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											4
TOTAL	23	0	1	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	1	0	2	1	0	0	0	0	0	4
101-300	1	0	1	1	1	0	0	0	0	0	4
301-500	0	0	3	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											17
TOTAL	1	1	4	3	2	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	1	1	0	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	1	1	0	0	0	0	0	0	29
---TIME 1801-2400 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	26	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	4	1	2	3	1	0	0	0	0	0	11
101-300	26	0	1	1	1	0	0	0	0	0	29
301-500	17	0	3	0	0	0	0	0	0	0	20
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											50
TOTAL	50	1	6	4	2	0	0	0	0	0	113

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF SEPT. 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TC
---TIME 0- 600 MST											
001-100	0	0	0	1	0	1	0	0	0	0	
101-300	0	0	0	0	0	0	0	0	0	0	
301-500	0	0	0	0	0	0	0	0	0	0	
501-900	0	0	0	0	0	0	0	0	0	0	
NO INVERSION											
TOTAL	0	0	0	1	0	1	0	0	0	0	
---TIME 601-1200 MST											
001-100	0	0	0	0	2	0	0	0	0	0	
101-300	0	0	0	0	0	0	0	0	0	0	
301-500	0	0	0	0	0	0	0	0	0	0	
501-900	0	0	0	0	0	0	0	0	0	0	
NO INVERSION											
TOTAL	0	0	0	0	2	0	0	0	0	0	
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	
101-300	0	0	0	0	0	0	0	0	0	0	
301-500	0	0	0	0	0	0	0	0	0	0	
501-900	0	0	0	0	0	0	0	0	0	0	
NO INVERSION											
TOTAL	0	0	0	0	0	0	0	0	0	0	
---TIME 1801-2400 MST											
001-100	0	0	0	0	1	0	0	0	0	0	
101-300	0	0	0	0	0	0	0	0	0	0	
301-500	0	0	0	0	0	0	0	0	0	0	
501-900	0	0	0	0	0	0	0	0	0	0	
NO INVERSION											
TOTAL	0	0	0	0	1	0	0	0	0	0	
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	3	1	0	0	0	0	
101-300	0	0	0	0	0	0	0	0	0	0	
301-500	0	0	0	0	0	0	0	0	0	0	
501-900	0	0	0	0	0	0	0	0	0	0	
NO INVERSION											
TOTAL	0	0	0	1	3	1	0	0	0	0	

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF SEPT. 1978

******** TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	D	D	C	C	C	C	D	E	F	F
2	F	F	F	F	E	D	C	C	D	E	F	F
3	F	F	F	F	B	D	C	C	D	E	E	E
4	E	E	E	E	C	D	C	C	C	D	E	E
5	E	D	D	D	D	C	C	D	D	D	E	E
6	E	E	E	D	C	C	C	C	D	D	D	D
7	D	D	D	D	D	D	C	D	D	E	D	E
8	E	E	D	D	C	C	C	C	C	E	F	F
9	F	F	F	D	C	C	C	C	E	E	E	E
10	E	E	D	D	D	C	C	C	D	D	E	E
11	E	E	E	D	D	D	D	D	D	E	D	D
12	D	D	D	D	D	D	D	D	E	E	E	E
13	E	D	D	C	C	C	C	B	D	E	E	E
14	E	F	F	D	C	C	C	C	D	D	E	E
15	E	E	E	D	C	D	D	C	D	D	E	E
16	E	E	D	C	C	C	C	C	D	E	F	F
17	F	F	D	B	C	C	C	C	D	E	E	E
18	D	D	D	D	D	D	D	D	D	E	F	F
19	F	E	E	D	B	B	C	C	C	D	F	F
20	E	E	E	E	C	D	C	C	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	D	D	E	E	E
23	E	E	E	E	C	D	C	C	D	F	F	F
24	E	F	F	E	C	D	B	C	D	F	F	F
25	F	F	F	F	C	D	C	C	D	F	F	F
26	F	F	F	F	B	D	B	C	D	F	F	F
27	E	E	E	E	B	D	C	C	D	D	E	E
28	F	F	D	D	D	D	E	E	E	E	F	F
29	E	E	E	E	C	D	B	C	D	F	F	F
30	F	F	F	E	C	C	C	D	D	D	D	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 3.0 % B= 3.1 % C=20.0 % D=29.4 % E=24.4 % F=16.7 %

U= 0.0 % M= 6.4 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF OCTOBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	INVERSION BASE HEIGHT (IN METERS) SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	3	0	0	0	0	0	0	0	0	0	3
301-500	18	0	0	0	0	0	0	0	0	0	18
501-900	4	0	0	0	0	0	0	0	0	0	4
NO INVERSION											5
TOTAL	26	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	2	0	0	0	0	0	0	0	2
101-300	1	11	2	0	0	0	0	0	0	0	14
301-500	1	5	0	0	0	0	0	0	0	0	6
501-900	0	1	0	0	0	0	0	0	0	0	1
NO INVERSION											8
TOTAL	2	17	4	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	1	1	0	0	0	0	0	0	0	2
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	1	2	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	25	0	0	0	0	0	0	0	0	0	25
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	29	0	0	0	0	0	0	0	0	0	31
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	2	1	3	0	0	0	0	0	0	0	6
101-300	29	11	3	0	0	0	0	0	0	0	43
301-500	22	5	0	0	0	0	0	0	0	0	27
501-900	4	1	0	0	0	0	0	0	0	0	5
NO INVERSION											43
TOTAL	57	18	6	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF OCTOBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	1	0	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	1	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	1	0	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											123
TOTAL	1	0	0	0	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF OCTOBER 1978

******** TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	D	C	C	C	C	D	F	E	E
2	F	F	F	F	C	D	C	C	D	F	F	F
3	F	F	F	E	C	C	C	D	E	D	E	E
4	F	F	F	F	C	D	C	C	D	D	E	E
5	F	F	F	F	C	D	C	C	D	F	F	F
6	F	F	F	F	B	D	B	C	D	F	F	F
7	F	F	F	E	C	C	D	C	E	E	F	F
8	F	F	F	F	B	D	C	C	D	F	F	F
9	F	F	F	F	D	B	C	C	D	F	F	F
10	E	F	F	E	D	C	C	D	D	D	D	D
11	E	E	D	D	D	C	C	C	D	E	E	E
12	E	F	F	E	D	C	C	C	C	F	F	F
13	F	F	D	D	B	B	C	C	D	F	F	F
14	F	F	F	F	D	B	B	B	D	F	F	F
15	F	F	F	F	D	B	E	B	D	E	E	E
16	E	E	E	E	D	M	M	C	C	E	E	E
17	F	F	F	E	D	C	C	C	D	E	F	F
18	F	F	F	F	D	C	C	B	D	F	F	F
19	F	F	F	F	D	C	C	C	D	F	F	F
20	F	F	F	F	D	C	C	C	D	E	D	D
21	D	D	F	F	D	C	C	C	D	E	F	F
22	F	F	F	F	D	B	C	C	D	E	F	F
23	F	F	F	E	D	B	B	C	E	E	E	E
24	D	D	D	D	D	C	C	C	D	D	F	F
25	F	F	F	F	D	B	B	B	D	F	E	E
26	F	F	F	F	D	B	B	B	E	E	F	F
27	E	E	E	E	D	C	C	D	D	E	E	D
28	D	D	F	F	D	C	C	C	D	E	E	D
29	D	D	D	E	D	C	C	C	D	F	E	E
30	E	F	F	D	C	C	C	C	F	F	F	F
31	F	F	F	E	D	B	C	C	D	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 6.5 % C=19.1 % D=21.8 % E=15.9 % F=36.3 %

U= 0.0 % M= 0.5 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF NOVEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	11	0	0	0	0	0	0	0	0	0	11
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											7
TOTAL	23	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	1	1	0	0	0	0	0	0	0	0	2
101-300	4	4	0	1	0	0	0	0	0	0	9
301-500	6	1	0	0	0	0	0	0	0	0	7
501-900	0	1	0	0	0	0	0	0	0	0	1
NO INVERSION											11
TOTAL	11	7	0	1	0	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	4	1	0	0	0	0	0	0	5
101-300	7	0	1	1	0	0	0	0	0	0	9
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											15
TOTAL	8	0	5	2	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	1	0	1	0	1	0	0	0	0	0	3
101-300	20	1	0	0	0	0	0	0	0	0	21
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	23	1	1	0	1	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	2	1	5	1	1	0	0	0	0	0	10
101-300	42	5	1	2	0	0	0	0	0	0	50
301-500	20	1	0	0	0	0	0	0	0	0	21
501-900	1	1	0	0	0	0	0	0	0	0	2
NO INVERSION											37
TOTAL	65	8	6	3	1	0	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF NOVEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 601-1200 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	1	0	0	0	0	0	30
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	0	0	0	0	0	0	30
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											119
TOTAL	0	0	0	0	1	0	0	0	0	0	120

ACCUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF NOVEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	F	F	F	E	B	B	B	D	D	F	F	F
2	F	F	F	F	B	B	C	D	D	E	E	E
3	E	E	E	E	E	D	D	D	D	E	E	E
4	E	D	D	D	D	D	D	D	D	F	F	F
5	E	E	E	F	D	B	C	C	E	F	F	F
6	F	F	F	E	B	B	D	C	E	E	E	E
7	F	F	F	E	D	B	C	E	E	E	E	E
8	D	D	D	D	D	D	D	D	D	E	E	E
9	E	F	F	D	D	D	D	D	D	D	D	D
10	D	D	D	D	C	C	C	C	D	D	D	D
11	D	D	D	D	C	C	C	C	D	D	D	E
12	D	D	D	D	C	C	C	C	E	E	E	D
13	D	D	D	D	C	C	C	C	F	F	F	F
14	E	E	E	E	E	B	B	C	D	D	F	F
15	F	E	E	E	E	B	B	C	D	E	E	E
16	E	E	E	E	C	C	C	C	D	E	E	E
17	E	E	E	E	E	E	D	D	D	E	E	E
18	E	D	D	D	D	E	D	D	D	D	D	E
19	E	E	D	D	D	D	D	D	D	D	D	D
20	D	D	D	C	C	D	D	D	E	E	E	E
21	E	F	F	F	F	D	C	B	D	E	E	E
22	E	D	D	D	C	C	B	B	D	D	D	D
23	E	E	E	E	E	E	E	E	E	E	E	E
24	E	E	E	E	E	E	E	D	D	D	E	E
25	E	E	E	E	E	E	E	E	E	E	E	E
26	E	E	E	E	D	B	C	D	D	E	E	E
27	F	F	F	E	E	B	D	D	D	E	D	D
28	E	D	E	F	E	E	E	E	E	E	E	E
29	F	F	E	E	E	E	E	E	E	E	E	E
30	E	D	D	D	D	E	E	E	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 5.3 % C= 9.2 % D=32.8 % E=41.7 % F=11.1 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF DECEMBER 1978

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	4	1	1	0	0	0	0	0	0	0	6
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	8	0	0	0	0	0	0	0	0	0	8
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	25	1	1	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	6	0	0	0	0	0	0	0	0	0	6
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											2
TOTAL	26	0	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	2	0	0	0	0	0	0	0	0	2
101-300	13	0	0	0	0	0	0	0	0	0	13
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											9
TOTAL	17	2	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	7	0	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	25	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	7	3	1	0	0	0	0	0	0	0	11
101-300	60	0	0	0	0	0	0	0	0	0	60
301-500	25	0	0	0	0	0	0	0	0	0	25
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											15
TOTAL	93	3	1	0	0	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF DECEMBER 1978

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	1	0	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	1	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	1	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	1	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	0	1	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	1	0	1	0	0	0	0	0	2
101-300	0	0	1	0	1	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											108
TOTAL	0	0	2	0	2	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY-MISSOULA MONTH OF DECEMBER 1978

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	E	D	D	D	D	D	E	E	E	E	E
2	E	E	E	E	E	E	E	E	C	C	E	D
3	D	D	D	E	D	E	E	E	E	E	E	E
4	E	E	E	D	D	D	D	C	E	C	E	E
5	E	E	E	E	E	E	E	E	E	E	C	C
6	E	E	E	E	E	E	E	C	C	E	F	F
7	F	E	E	E	E	E	F	E	E	F	F	F
8	E	E	E	E	E	E	E	E	C	E	C	C
9	D	E	D	D	E	E	E	E	C	C	E	E
10	E	E	E	E	E	E	E	E	E	E	E	E
11	D	D	D	D	E	E	E	C	E	E	F	F
12	E	E	E	E	E	D	D	C	F	F	F	F
13	F	F	F	F	F	F	F	F	F	E	E	E
14	E	E	E	E	E	E	E	E	D	C	C	D
15	D	D	E	D	E	E	E	E	E	D	E	E
16	F	E	E	E	E	E	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	E	F	F
18	E	E	E	E	E	E	E	E	E	E	E	E
19	E	E	E	E	E	E	D	D	D	E	E	E
20	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M
23	F	E	E	E	E	E	D	D	D	E	E	E
24	E	E	E	D	D	D	D	D	C	E	E	E
25	E	F	F	F	E	E	D	C	D	D	C	E
26	E	E	E	E	E	E	D	D	C	E	E	E
27	E	E	E	E	E	E	E	D	C	C	C	D
28	D	D	D	D	D	D	D	D	C	C	C	C
29	D	E	E	E	F	D	D	D	D	E	E	E
30	E	F	F	F	F	F	F	E	E	E	E	E
31	E	E	E	F	F	F	F	F	F	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 0.3 % D=23.7 % E=54.3 % F=12.1 %

U= 0.0 % M= 9.7 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF JANUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	1	0	0	2	0	0	0	0	0	0	3
101-300	15	0	0	0	0	0	0	0	0	0	15
301-500	10	0	0	0	0	0	0	0	0	0	10
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	26	0	0	2	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	1	1	0	0	0	0	0	0	2
101-300	15	0	0	0	0	0	0	0	0	0	15
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	27	0	1	1	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	15	0	0	0	0	0	0	0	0	0	15
301-500	12	0	0	0	0	0	0	0	0	0	12
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											0
TOTAL	31	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	25	0	0	0	0	0	0	0	0	0	25
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	29	0	0	0	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	4	0	1	3	1	0	0	0	0	0	9
101-300	70	0	0	0	0	0	0	0	0	0	70
301-500	38	0	0	0	0	0	0	0	0	0	38
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											6
TOTAL	113	0	1	3	1	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF JANUARY 1979

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	1	1	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	1	1	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	2	0	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	2	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	3	1	0	0	0	0	0	4
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											120
TOTAL	0	0	0	3	1	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF JANUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	D	D	F	F	F	F	E	E	E	E	E	E
2	E	E	E	E	E	E	E	D	D	D	D	D
3	D	F	F	E	E	E	E	E	F	E	E	E
4	E	E	E	E	E	E	E	E	E	F	F	F
5	F	F	F	F	F	F	F	F	F	F	F	F
6	F	F	F	F	F	F	F	F	F	F	F	F
7	F	F	F	F	F	F	F	F	F	F	F	F
8	F	F	F	E	E	E	F	F	F	F	F	F
9	E	E	E	D	E	E	D	D	D	D	D	D
10	D	D	D	D	D	D	D	E	D	E	E	D
11	D	D	D	D	E	E	E	E	D	D	E	E
12	E	E	E	E	D	E	D	D	E	D	E	E
13	D	D	D	D	D	E	D	E	E	E	E	E
14	E	E	E	E	E	E	E	D	D	D	D	D
15	D	D	D	D	D	E	E	D	D	D	E	E
16	F	F	F	F	E	E	E	F	F	F	F	F
17	E	E	E	E	F	F	F	E	E	F	E	E
18	E	E	E	E	E	E	E	F	F	E	E	E
19	E	E	D	D	E	E	E	E	E	E	E	E
20	E	E	D	E	E	E	E	E	E	E	E	E
21	E	F	F	E	E	E	D	E	D	D	D	E
22	E	D	E	E	E	E	D	E	E	E	E	E
23	F	F	F	E	E	E	E	E	E	E	E	E
24	E	D	D	D	D	D	E	E	E	E	F	F
25	E	E	E	E	E	E	E	E	E	F	F	F
26	E	E	E	E	E	E	F	F	F	E	E	E
27	E	E	D	D	D	D	E	E	E	D	E	E
28	E	E	E	E	E	E	E	E	E	E	F	F
29	F	F	F	E	E	E	F	F	D	D	F	F
30	F	F	F	F	F	F	F	F	D	F	F	F
31	F	F	F	F	F	F	E	E	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 0.0 % D=19.5 % E=51.1 % F=29.0 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF FEBRUARY 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	5	0	0	1	0	0	0	0	0	0	6
101-300	14	0	0	0	0	0	0	0	0	0	14
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											4
TOTAL	23	0	0	1	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	15	1	1	0	0	0	0	0	0	0	17
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											6
TOTAL	20	1	1	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	16	0	0	0	0	0	0	0	0	0	16
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	18	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	4	0	0	1	0	0	0	0	0	0	5
101-300	18	1	0	0	0	0	0	0	0	0	19
301-500	3	0	0	0	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	25	1	0	1	0	0	0	0	0	0	28
FREQUENCY SUMMARY FOR FIRST INVERSION											
001-100	12	0	0	2	0	0	0	0	0	0	14
101-300	63	2	1	0	0	0	0	0	0	0	66
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											21
TOTAL	86	2	1	2	0	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF FEBRUARY 1979

****** SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	1	0	0	0	0	0	0	28
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---TIME 1801-2400 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	0	0	0	0	0	0	0	28
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											111
TOTAL	0	0	0	1	0	0	0	0	0	0	112

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF FEBRUARY 1979

********* TWO HOUR STABILITY ANALYSIS **********

DAY	HOUR 02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	E	D	E	F	E	E	E	E	E
2	E	E	E	D	E	E	E	E	E	E	E	E
3	D	D	D	D	D	E	D	D	D	E	E	E
4	E	E	E	E	F	F	E	E	E	E	E	E
5	E	E	E	E	D	D	D	D	E	D	E	E
6	E	E	E	E	E	E	D	D	E	E	D	D
7	E	E	D	D	D	D	D	E	E	F	E	E
8	F	F	F	E	E	E	E	E	D	D	D	D
9	D	D	D	D	E	E	E	E	E	E	E	E
10	E	E	E	D	E	D	D	E	D	D	D	D
11	D	E	E	E	E	E	E	E	E	E	E	D
12	D	D	D	E	E	E	D	C	D	F	E	D
13	D	D	D	E	D	E	D	D	D	E	E	D
14	D	D	E	E	E	E	D	D	D	D	E	E
15	E	E	E	E	E	E	E	E	E	E	E	E
16	D	D	D	E	E	E	E	D	D	D	D	E
17	D	E	D	D	D	D	D	D	E	E	E	E
18	E	E	E	E	E	E	E	E	E	E	E	D
19	D	E	E	E	E	D	D	D	D	E	E	E
20	F	E	E	D	D	D	D	D	D	F	E	E
21	E	E	E	E	E	E	E	D	E	E	E	E
22	F	E	E	E	E	E	E	E	E	E	E	E
23	D	D	D	D	D	E	E	D	D	D	D	E
24	D	E	E	D	E	E	E	E	E	E	E	E
25	E	E	E	E	D	C	C	E	E	E	E	E
26	E	E	E	E	E	D	D	D	E	E	E	E
27	E	E	E	E	E	D	E	E	E	E	E	E
28	D	D	D	D	D	D	D	D	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.0 % C= 0.9 % D=33.3 % E=62.6 % F= 3.0 %

U= 0.0 % M= 0.0 %

NOTE: U=UNKNOWN M=MISSING DATA
CLOUD COVER CONDITIONS USED FROM NWS STATION AT MISSOULA
WIND DATA USED FROM NWS STATION AT MISSOULA

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF MARCH 1979

******* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE *******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	18	0	0	0	0	0	0	0	0	0	18
301-500	10	0	0	0	0	0	0	0	0	0	10
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											3
TOTAL	28	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	1	0	1	1	0	0	0	0	0	0	3
101-300	5	5	3	0	0	0	0	0	0	0	13
301-500	3	2	0	0	0	0	0	0	0	0	5
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											10
TOTAL	9	7	4	1	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	1	0	0	0	0	0	0	0	0	1
101-300	3	0	0	0	0	0	0	0	0	0	3
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											25
TOTAL	5	1	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	7	0	0	1	0	0	0	0	0	0	8
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	2	0	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											2
TOTAL	28	0	0	1	0	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR FIRST INVERSION ----------											
001-100	8	1	1	2	0	0	0	0	0	0	12
101-300	45	5	3	0	0	0	0	0	0	0	53
301-500	17	2	0	0	0	0	0	0	0	0	19
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											40
TOTAL	70	8	4	2	0	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS

MONTANA AIR POLLUTION STUDY - MISSOULA MONTH OF MARCH 1979

******* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE ******

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (IN METERS) 100	200	300	400	500	600	700	800	900	TOTAL
---TIME 0- 600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 601-1200 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1201-1800 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---TIME 1801-2400 MST											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											30
TOTAL	0	0	0	0	1	0	0	0	0	0	31
---------- FREQUENCY SUMMARY FOR SECOND INVERSION ----------											
001-100	0	0	0	0	1	0	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											123
TOTAL	0	0	0	0	1	0	0	0	0	0	124